

Sequence Listing

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<110> Genentech, Inc.  
Ashkenazi, Avi  
Botstein, David  
Desnoyers, Luc  
Eaton, Dan L.  
Ferrara, Napoleone  
Filvaroff, Ellen  
Fong, Sherman  
Gao, Wei-Qiang  
Gerber, Hanspeter  
Gerritsen, Mary E.  
Goddard, A.  
Godowski, Paul J.  
Grimaldi, Christopher J.  
Gurney, Austin L.  
Hillan, Kenneth, J.  
Kljavin, Ivar J.  
Mather, Jennie P.  
Pan, James  
Paoni, Nicholas F.  
Roy, Margaret Ann  
Stewart, Timothy A.  
Tumas, Daniel  
Williams, P. Mickey  
Wood, William, I.

<120> Secreted and Transmembrane Polypeptides and Nucleic  
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| Leu | Leu | Leu | Pro | Pro | Ala | Pro | Glu | Ala | Ala | Lys | Lys | Pro | Thr | Pro |  | 20  | 25  | 30  |
| Cys | His | Arg | Cys | Arg | Gly | Leu | Val | Asp | Lys | Phe | Asn | Gln | Gly | Met |  | 35  | 40  | 45  |
| Val | Asp | Thr | Ala | Lys | Lys | Asn | Phe | Gly | Gly | Gly | Asn | Thr | Ala | Trp |  | 50  | 55  | 60  |
| Glu | Glu | Lys | Thr | Leu | Ser | Lys | Tyr | Glu | Ser | Ser | Glu | Ile | Arg | Leu |  | 65  | 70  | 75  |
| Leu | Glu | Ile | Leu | Glu | Gly | Leu | Cys | Glu | Ser | Ser | Asp | Phe | Glu | Cys |  | 80  | 85  | 90  |
| Asn | Gln | Met | Leu | Glu | Ala | Gln | Glu | Glu | His | Leu | Glu | Ala | Trp | Trp |  | 95  | 100 | 105 |
| Leu | Gln | Leu | Lys | Ser | Glu | Tyr | Pro | Asp | Leu | Phe | Glu | Trp | Phe | Cys |  | 110 | 115 | 120 |
| Val | Lys | Thr | Leu | Lys | Val | Cys | Cys | Ser | Pro | Gly | Thr | Tyr | Gly | Pro |  | 125 | 130 | 135 |
| Asp | Cys | Leu | Ala | Cys | Gln | Gly | Gly | Ser | Gln | Arg | Pro | Cys | Ser | Gly |  | 140 | 145 | 150 |
| Asn | Gly | His | Cys | Ser | Gly | Asp | Gly | Ser | Arg | Gln | Gly | Asp | Gly | Ser |  | 155 | 160 | 165 |
| Cys | Arg | Cys | His | Met | Gly | Tyr | Gln | Gly | Pro | Leu | Cys | Thr | Asp | Cys |  | 170 | 175 | 180 |
| Met | Asp | Gly | Tyr | Phe | Ser | Ser | Leu | Arg | Asn | Glu | Thr | His | Ser | Ile |  | 185 | 190 | 195 |
| Cys | Thr | Ala | Cys | Asp | Glu | Ser | Cys | Lys | Thr | Cys | Ser | Gly | Leu | Thr |  | 200 | 205 | 210 |
| Asn | Arg | Asp | Cys | Gly | Glu | Cys | Glu | Val | Gly | Trp | Val | Leu | Asp | Glu |  | 215 | 220 | 225 |
| Gly | Ala | Cys | Val | Asp | Val | Asp | Glu | Cys | Ala | Ala | Glu | Pro | Pro | Pro |  | 230 | 235 | 240 |
| Cys | Ser | Ala | Ala | Gln | Phe | Cys | Lys | Asn | Ala | Asn | Gly | Ser | Tyr | Thr |  | 245 | 250 | 255 |
| Cys | Glu | Glu | Cys | Asp | Ser | Ser | Cys | Val | Gly | Cys | Thr | Gly | Glu | Gly |  | 260 | 265 | 270 |
| Pro | Gly | Asn | Cys | Lys | Glu | Cys | Ile | Ser | Gly | Tyr | Ala | Arg | Glu | His |  | 275 | 280 | 285 |
| Gly | Gln | Cys | Ala | Asp | Val | Asp | Glu | Cys | Ser | Leu | Ala | Glu | Lys | Thr |  | 290 | 295 | 300 |
| Cys | Val | Arg | Lys | Asn | Glu | Asn | Cys | Tyr | Asn | Thr | Pro | Gly | Ser | Tyr |  | 305 | 310 | 315 |



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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Ser | Ile | Leu | Leu | Cys | Leu | Leu | Ala | Leu | Arg | Ala | Glu | Ala | Gly | Pro |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     | 30  |     |
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| Pro | Gln | Glu | Glu | Ser | Leu | Tyr | Leu | Trp | Ile | Asp | Ala | His | Gln | Ala |
|     |     |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Arg | Val | Leu | Ile | Gly | Phe | Glu | Glu | Asp | Ile | Leu | Ile | Val | Ser | Glu |  | 50  | 55  | 60  |
| Gly | Lys | Met | Ala | Pro | Phe | Thr | His | Asp | Phe | Arg | Lys | Ala | Gln | Gln |  | 65  | 70  | 75  |
| Arg | Met | Pro | Ala | Ile | Pro | Val | Asn | Ile | His | Ser | Met | Asn | Phe | Thr |  | 80  | 85  | 90  |
| Trp | Gln | Ala | Ala | Gly | Gln | Ala | Glu | Tyr | Phe | Tyr | Glu | Phe | Leu | Ser |  | 95  | 100 | 105 |
| Leu | Arg | Ser | Leu | Asp | Lys | Gly | Ile | Met | Ala | Asp | Pro | Thr | Val | Asn |  | 110 | 115 | 120 |
| Val | Pro | Leu | Leu | Gly | Thr | Val | Pro | His | Lys | Ala | Ser | Val | Val | Gln |  | 125 | 130 | 135 |
| Val | Gly | Phe | Pro | Cys | Leu | Gly | Lys | Gln | Asp | Gly | Val | Ala | Ala | Phe |  | 140 | 145 | 150 |
| Glu | Val | Asp | Val | Ile | Val | Met | Asn | Ser | Glu | Gly | Asn | Thr | Ile | Leu |  | 155 | 160 | 165 |
| Gln | Thr | Pro | Gln | Asn | Ala | Ile | Phe | Phe | Lys | Thr | Cys | Gln | Gln | Ala |  | 170 | 175 | 180 |
| Glu | Cys | Pro | Gly | Gly | Cys | Arg | Asn | Gly | Gly | Phe | Cys | Asn | Glu | Arg |  | 185 | 190 | 195 |
| Arg | Ile | Cys | Glu | Cys | Pro | Asp | Gly | Phe | His | Gly | Pro | His | Cys | Glu |  | 200 | 205 | 210 |
| Lys | Ala | Leu | Cys | Thr | Pro | Arg | Cys | Met | Asn | Gly | Gly | Leu | Cys | Val |  | 215 | 220 | 225 |
| Thr | Pro | Gly | Phe | Cys | Ile | Cys | Pro | Pro | Gly | Phe | Tyr | Gly | Val | Asn |  | 230 | 235 | 240 |
| Cys | Asp | Lys | Ala | Asn | Cys | Ser | Thr | Thr | Cys | Phe | Asn | Gly | Gly | Thr |  | 245 | 250 | 255 |
| Cys | Phe | Tyr | Pro | Gly | Lys | Cys | Ile | Cys | Pro | Pro | Gly | Leu | Glu | Gly |  | 260 | 265 | 270 |
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| Gly | Lys | Cys | Ile | Gly | Lys | Ser | Lys | Cys | Lys | Cys | Ser | Lys | Gly | Tyr |  | 290 | 295 | 300 |
| Gln | Gly | Asp | Leu | Cys | Ser | Lys | Pro | Val | Cys | Glu | Pro | Gly | Cys | Gly |  | 305 | 310 | 315 |
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| Gly | Trp | His | Gly | Arg | His | Cys | Asn | Lys | Arg | Tyr | Glu | Ala | Ser | Leu |  | 335 | 340 | 345 |

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
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|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |  |
| Leu | Ala | Pro | Gly | Leu | His | Leu | Arg | Gly | Ile | Arg | Asp | Ala | Gly | Gly |  |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |  |
| Arg | Tyr | Cys | Gln | Glu | Gln | Asp | Leu | Cys | Cys | Arg | Gly | Arg | Ala | Asp |  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |  |
| Asp | Cys | Ala | Leu | Pro | Tyr | Leu | Gly | Ala | Ile | Cys | Tyr | Cys | Asp | Leu |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |  |
| Phe | Cys | Asn | Arg | Thr | Val | Ser | Asp | Cys | Cys | Pro | Asp | Phe | Trp | Asp |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Phe | Cys | Leu | Gly | Val | Pro | Pro | Pro | Phe | Pro | Pro | Ile | Gln | Gly | Cys |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Met | His | Gly | Gly | Arg | Ile | Tyr | Pro | Val | Leu | Gly | Thr | Tyr | Trp | Asp |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Asn | Cys | Asn | Arg | Cys | Thr | Cys | Gln | Glu | Asn | Arg | Gln | Trp | His | Gly |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Gly | Ser | Arg | His | Asp | Gln | Ser | His | Gln | Pro | Gly | Gln | Leu | Trp | Leu |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Ala | Gly | Trp | Glu | Pro | Gln | Arg | Leu | Leu | Gly | His | Asp | Pro | Gly |     |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     |     |  |

<210> 13

<211> 533

<212> DNA

<213> Homo Sapien

<220>

<221> unsure

<222> 33, 37, 80, 94, 144, 188

<223> unknown base

<400> 13

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tctcgatggt gcctgggtgt tctgctgctg ccgagggntg gtgtctgacc 200
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ctcctgtcta ccgcctcggc tccaacgaca aggagatcat gaaggagctg 400
atggagaatg gcctgtcca agccctcatg gaggtgcatg aggacttctt 450

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cagagagata ccgcccggcat gggaccact cag 533

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<400> 14  
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<210> 15  
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<220>  
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<400> 15  
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<210> 16  
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<210> 17  
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 <213> Homo Sapien

<400> 17  
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 gtggagaact gcacccagct gggggagcag tgctggaccg cgcgcatccg 150  
 cgcagttggc ctcttgaccg tcatcagcaa aggctgcage ttgaactgcg 200  
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 cgccatcctt gcgctgctcc ctgcactcgg cctgctgctc tggggacccg 350  
 gccagctata ggctctgggg ggccccgctg cagccacac tgggtgtggt 400



gccccaggcc tctgtgccac tcctcacaga cctggcccag tgggagcctg 450  
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 cctggaggcc tggaggaagg ggccaggcct cacattcgtg gggctccctg 900  
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<210> 18

<211> 189

<212> PRT

<213> Homo Sapien

<400> 18

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | His | Arg | Thr | Thr | Thr | Trp | Ala | Arg | Arg | Thr | Ser | Arg | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Val | Thr | Pro | Thr | Cys | Ala | Thr | Pro | Ala | Gly | Pro | Met | Pro | Cys | Ser |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |
| Arg | Leu | Pro | Pro | Ser | Leu | Arg | Cys | Ser | Leu | His | Ser | Ala | Cys | Cys |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |
| Ser | Gly | Asp | Pro | Ala | Ser | Tyr | Arg | Leu | Trp | Gly | Ala | Pro | Leu | Gln |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |
| Pro | Thr | Leu | Gly | Val | Val | Pro | Gln | Ala | Ser | Val | Pro | Leu | Leu | Thr |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |
| Asp | Leu | Ala | Gln | Trp | Glu | Pro | Val | Leu | Val | Pro | Glu | Ala | His | Pro |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |
| Asn | Ala | Ser | Leu | Thr | Met | Tyr | Val | Cys | Thr | Pro | Val | Pro | His | Pro |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| Asp | Pro | Pro | Met | Ala | Leu | Ser | Arg | Thr | Pro | Thr | Arg | Gln | Ile | Ser |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |
| Ser | Ser | Asp | Thr | Asp | Pro | Pro | Ala | Asp | Gly | Pro | Ser | Asn | Pro | Leu |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |
| Cys | Cys | Cys | Phe | His | Gly | Pro | Ala | Phe | Ser | Thr | Leu | Asn | Pro | Val |

|   |     |  |     |  |     |
|---|-----|--|-----|--|-----|
|   | 140 |  | 145 |  | 150 |
| Leu Arg His Leu Phe Pro Gln Glu Ala Phe Pro Ala His Pro Ile |     |  |     |  |     |
|   | 155 |  | 160 |  | 165 |
| Tyr Asp Leu Ser Gln Val Trp Ser Val Val Ser Pro Ala Pro Ser |     |  |     |  |     |
|   | 170 |  | 175 |  | 180 |
| Arg Gly Gln Ala Leu Arg Arg Ala Gln                         |     |  |     |  |     |
|   | 185 |  |     |  |     |

<210> 19  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 19  
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<210> 20  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 20  
 tgcacaagtc ggtgtcacag cacg 24

<210> 21  
 <211> 44  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 21  
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<210> 22  
 <211> 1200  
 <212> DNA  
 <213> Homo Sapien

<400> 22  
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 gtgagggacc agggcgccat gaccgaccag ctgagcaggc ggcagatccg 150  
 cgagtaccaa ctctacagca ggaccagtgg caagcacgtg caggtcaccg 200  
 ggcgtcgcat ctccgccacc gccgaggacg gcaacaagtt tgccaagctc 250

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 gagtgagaag tacatctgta tgaacaagag gggcaagctc atcgggaagc 350  
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 ccggtgcccc aggggcggct ggcacagtgc ccccttcccg gacgggtggc 850  
 aggccctgga gaggaactga gtgtcacct gatctcaggc caccagcctc 900  
 tgccggcctc ccagccgggc tcctgaagcc cgctgaaagg tcagcgactg 950  
 aaggccttgc agacaaccgt ctggaggtgg ctgtcctcaa aatctgcttc 1000  
 tcggatctcc ctcagtctgc cccagcccc caaactcctc ctggctagac 1050  
 tgtaggaagg gacttttgtt tgtttgtttg tttcaggaaa aaagaaagg 1100  
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 cctgcacccc acccccaact ccagccccg gaataaaacc attttcctgc 1200

<210> 23  
 <211> 205  
 <212> PRT  
 <213> Homo Sapien

<400> 23  
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 Ala Met Thr Asp Gln Leu Ser Arg Arg Gln Ile Arg Glu Tyr Gln  
 35 40 45  
 Leu Tyr Ser Arg Thr Ser Gly Lys His Val Gln Val Thr Gly Arg  
 50 55 60  
 Arg Ile Ser Ala Thr Ala Glu Asp Gly Asn Lys Phe Ala Lys Leu  
 65 70 75

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ile | Val | Glu | Thr | Asp | Thr | Phe | Gly | Ser | Arg | Val | Arg | Ile | Lys | Gly |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Ala | Glu | Ser | Glu | Lys | Tyr | Ile | Cys | Met | Asn | Lys | Arg | Gly | Lys | Leu |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Ile | Gly | Lys | Pro | Ser | Gly | Lys | Ser | Lys | Asp | Cys | Val | Phe | Thr | Glu |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Ile | Val | Leu | Glu | Asn | Asn | Tyr | Thr | Ala | Phe | Gln | Asn | Ala | Arg | His |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Glu | Gly | Trp | Phe | Met | Ala | Phe | Thr | Arg | Gln | Gly | Arg | Pro | Arg | Gln |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Ala | Ser | Arg | Ser | Arg | Gln | Asn | Gln | Arg | Glu | Ala | His | Phe | Ile | Lys |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Arg | Leu | Tyr | Gln | Gly | Gln | Leu | Pro | Phe | Pro | Asn | His | Ala | Glu | Lys |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Gln | Lys | Gln | Phe | Glu | Phe | Val | Gly | Ser | Ala | Pro | Thr | Arg | Arg | Thr |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Lys | Arg | Thr | Arg | Arg | Pro | Gln | Pro | Leu | Thr |     |     |     |     |     |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |     |  |

<210> 24  
 <211> 28  
 <212> DNA  
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<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 24  
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<210> 25  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 25  
 ccggtgacct gcacgtgctt gcca 24

<210> 26  
 <211> 41  
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<220>  
 <223> Synthetic Oligonucleotide Probe

<220>

<221> unsure

<222> 21

<223> unknown base

<400> 26

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<210> 27

<211> 2479

<212> DNA

<213> Homo Sapien

<400> 27

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gagacagcag ggagattatt ttaccatacg ccctcaggac gttccctcta 150

gctggagttc tggacttcaa cagaaccca tccagtcatt ttgattttgc 200

tgtttatttt ttttttcttt ttctttttcc caccacattg tattttattt 250

ccgtacttca gaaatgggccc tacagaccac aaagtggccc agccatgggg 300

cttttttccct gaagtcttgg cttatcattt ccctggggct ctactcacag 350

gtgtccaaac tcctggcctg ccctagtgtg tgccgctgcg acaggaactt 400

tgtctactgt aatgagcgaa gcttgacctc agtgccctctt gggatcccgg 450

agggcgtaac cgtactctac ctccacaaca accaaattaa taatgctgga 500

tttccctgcag aactgcacaa tgtacagtcg gtgcacacgg tctacctgta 550

tggcaaccaa ctggacgaat tccccatgaa ccttcccaag aatgtcagag 600

ttctccattt gcaggaaaac aatattcaga ccatttcaag ggctgctctt 650

gcccagctct tgaagcttga agagctgcac ctggatgaca actccatata 700

cacagtgggg gtggaagacg gggccttccg ggaggctatt agcctcaaata 750

tgttgttttt gtctaagaat cacctgagca gtgtgcctgt tgggcttcct 800

gtggacttgc aagagctgag agtggatgaa aatcgaattg ctgtcatata 850

cgacatggcc ttccagaatc tcacgagctt ggagcgtctt attgtggacg 900

ggaacctcct gaccaacaag ggtatcgccg agggcacctt cagccatctc 950

accaagctca aggaattttc aattgtacgt aattcgctgt cccaccctcc 1000

tcccgatctc ccaggtagcg atctgatcag gctctatttg caggacaacc 1050

agataaacca cattcctttg acagccttct caaatctgcg taagctggaa 1100

cggctggata tatccaacaa ccaactgcgg atgctgactc aaggggtttt 1150

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<210> 28  
 <211> 660  
 <212> PRT  
 <213> Homo Sapien

<400> 28

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Gly | Leu | Gln | Thr | Thr | Lys | Trp | Pro | Ser | His | Gly | Ala | Phe | Phe |  |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |  |
| Leu | Lys | Ser | Trp | Leu | Ile | Ile | Ser | Leu | Gly | Leu | Tyr | Ser | Gln | Val |  |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |  |
| Ser | Lys | Leu | Leu | Ala | Cys | Pro | Ser | Val | Cys | Arg | Cys | Asp | Arg | Asn |  |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |  |
| Phe | Val | Tyr | Cys | Asn | Glu | Arg | Ser | Leu | Thr | Ser | Val | Pro | Leu | Gly |  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |  |
| Ile | Pro | Glu | Gly | Val | Thr | Val | Leu | Tyr | Leu | His | Asn | Asn | Gln | Ile |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |  |
| Asn | Asn | Ala | Gly | Phe | Pro | Ala | Glu | Leu | His | Asn | Val | Gln | Ser | Val |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| His | Thr | Val | Tyr | Leu | Tyr | Gly | Asn | Gln | Leu | Asp | Glu | Phe | Pro | Met |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Asn | Leu | Pro | Lys | Asn | Val | Arg | Val | Leu | His | Leu | Gln | Glu | Asn | Asn |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Ile | Gln | Thr | Ile | Ser | Arg | Ala | Ala | Leu | Ala | Gln | Leu | Leu | Lys | Leu |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Glu | Glu | Leu | His | Leu | Asp | Asp | Asn | Ser | Ile | Ser | Thr | Val | Gly | Val |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Glu | Asp | Gly | Ala | Phe | Arg | Glu | Ala | Ile | Ser | Leu | Lys | Leu | Leu | Phe |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Leu | Ser | Lys | Asn | His | Leu | Ser | Ser | Val | Pro | Val | Gly | Leu | Pro | Val |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Asp | Leu | Gln | Glu | Leu | Arg | Val | Asp | Glu | Asn | Arg | Ile | Ala | Val | Ile |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Ser | Asp | Met | Ala | Phe | Gln | Asn | Leu | Thr | Ser | Leu | Glu | Arg | Leu | Ile |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Val | Asp | Gly | Asn | Leu | Leu | Thr | Asn | Lys | Gly | Ile | Ala | Glu | Gly | Thr |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Phe | Ser | His | Leu | Thr | Lys | Leu | Lys | Glu | Phe | Ser | Ile | Val | Arg | Asn |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Ser | Leu | Ser | His | Pro | Pro | Pro | Asp | Leu | Pro | Gly | Thr | His | Leu | Ile |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Arg | Leu | Tyr | Leu | Gln | Asp | Asn | Gln | Ile | Asn | His | Ile | Pro | Leu | Thr |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Ala | Phe | Ser | Asn | Leu | Arg | Lys | Leu | Glu | Arg | Leu | Asp | Ile | Ser | Asn |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Asn | Gln | Leu | Arg | Met | Leu | Thr | Gln | Gly | Val | Phe | Asp | Asn | Leu | Ser |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asn | Leu | Lys | Gln | Leu | Thr | Ala | Arg | Asn | Asn | Pro | Trp | Phe | Cys | Asp |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |
| Cys | Ser | Ile | Lys | Trp | Val | Thr | Glu | Trp | Leu | Lys | Tyr | Ile | Pro | Ser |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |
| Ser | Leu | Asn | Val | Arg | Gly | Phe | Met | Cys | Gln | Gly | Pro | Glu | Gln | Val |  |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |  |
| Arg | Gly | Met | Ala | Val | Arg | Glu | Leu | Asn | Met | Asn | Leu | Leu | Ser | Cys |  |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |  |
| Pro | Thr | Thr | Thr | Pro | Gly | Leu | Pro | Leu | Phe | Thr | Pro | Ala | Pro | Ser |  |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |  |
| Thr | Ala | Ser | Pro | Thr | Thr | Gln | Pro | Pro | Thr | Leu | Ser | Ile | Pro | Asn |  |
|     |     |     |     | 380 |     |     |     |     | 385 |     |     |     |     | 390 |  |
| Pro | Ser | Arg | Ser | Tyr | Thr | Pro | Pro | Thr | Pro | Thr | Thr | Ser | Lys | Leu |  |
|     |     |     |     | 395 |     |     |     |     | 400 |     |     |     |     | 405 |  |
| Pro | Thr | Ile | Pro | Asp | Trp | Asp | Gly | Arg | Glu | Arg | Val | Thr | Pro | Pro |  |
|     |     |     |     | 410 |     |     |     |     | 415 |     |     |     |     | 420 |  |
| Ile | Ser | Glu | Arg | Ile | Gln | Leu | Ser | Ile | His | Phe | Val | Asn | Asp | Thr |  |
|     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |     | 435 |  |
| Ser | Ile | Gln | Val | Ser | Trp | Leu | Ser | Leu | Phe | Thr | Val | Met | Ala | Tyr |  |
|     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     | 450 |  |
| Lys | Leu | Thr | Trp | Val | Lys | Met | Gly | His | Ser | Leu | Val | Gly | Gly | Ile |  |
|     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     | 465 |  |
| Val | Gln | Glu | Arg | Ile | Val | Ser | Gly | Glu | Lys | Gln | His | Leu | Ser | Leu |  |
|     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Val | Asn | Leu | Glu | Pro | Arg | Ser | Thr | Tyr | Arg | Ile | Cys | Leu | Val | Pro |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |  |
| Leu | Asp | Ala | Phe | Asn | Tyr | Arg | Ala | Val | Glu | Asp | Thr | Ile | Cys | Ser |  |
|     |     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |  |
| Glu | Ala | Thr | Thr | His | Ala | Ser | Tyr | Leu | Asn | Asn | Gly | Ser | Asn | Thr |  |
|     |     |     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |  |
| Ala | Ser | Ser | His | Glu | Gln | Thr | Thr | Ser | His | Ser | Met | Gly | Ser | Pro |  |
|     |     |     |     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |  |
| Phe | Leu | Leu | Ala | Gly | Leu | Ile | Gly | Gly | Ala | Val | Ile | Phe | Val | Leu |  |
|     |     |     |     | 545 |     |     |     |     | 550 |     |     |     |     | 555 |  |
| Val | Val | Leu | Leu | Ser | Val | Phe | Cys | Trp | His | Met | His | Lys | Lys | Gly |  |
|     |     |     |     | 560 |     |     |     |     | 565 |     |     |     |     | 570 |  |
| Arg | Tyr | Thr | Ser | Gln | Lys | Trp | Lys | Tyr | Asn | Arg | Gly | Arg | Arg | Lys |  |
|     |     |     |     | 575 |     |     |     |     | 580 |     |     |     |     | 585 |  |
| Asp | Asp | Tyr | Cys | Glu | Ala | Gly | Thr | Lys | Lys | Asp | Asn | Ser | Ile | Leu |  |
|     |     |     |     | 590 |     |     |     |     | 595 |     |     |     |     | 600 |  |



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Met | Thr | Glu | Thr | Ser | Phe | Gln | Ile | Val | Ser | Leu | Asn | Asn | Asp |
|     |     |     |     | 605 |     |     |     |     | 610 |     |     |     |     | 615 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Gln | Leu | Leu | Lys | Gly | Asp | Phe | Arg | Leu | Gln | Pro | Ile | Tyr | Thr | Pro |
|     |     |     |     | 620 |     |     |     |     | 625 |     |     |     |     | 630 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Asn | Gly | Gly | Ile | Asn | Tyr | Thr | Asp | Cys | His | Ile | Pro | Asn | Asn | Met |
|     |     |     |     | 635 |     |     |     |     | 640 |     |     |     |     | 645 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Arg | Tyr | Cys | Asn | Ser | Ser | Val | Pro | Asp | Leu | Glu | His | Cys | His | Thr |
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<211> 915

<212> PRT

<213> Homo Sapien

<400> 34

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Glu | Lys | Met | Leu | Ala | Gly | Cys | Phe | Leu | Leu | Ile | Leu | Gly | Gln | 1   | 5   | 10  | 15 |
| Ile | Val | Leu | Leu | Pro | Ala | Glu | Ala | Arg | Glu | Arg | Ser | Arg | Gly | Arg | 20  | 25  | 30  |    |
| Ser | Ile | Ser | Arg | Gly | Arg | His | Ala | Arg | Thr | His | Pro | Gln | Thr | Ala | 35  | 40  | 45  |    |
| Leu | Leu | Glu | Ser | Ser | Cys | Glu | Asn | Lys | Arg | Ala | Asp | Leu | Val | Phe | 50  | 55  | 60  |    |
| Ile | Ile | Asp | Ser | Ser | Arg | Ser | Val | Asn | Thr | His | Asp | Tyr | Ala | Lys | 65  | 70  | 75  |    |
| Val | Lys | Glu | Phe | Ile | Val | Asp | Ile | Leu | Gln | Phe | Leu | Asp | Ile | Gly | 80  | 85  | 90  |    |
| Pro | Asp | Val | Thr | Arg | Val | Gly | Leu | Leu | Gln | Tyr | Gly | Ser | Thr | Val | 95  | 100 | 105 |    |
| Lys | Asn | Glu | Phe | Ser | Leu | Lys | Thr | Phe | Lys | Arg | Lys | Ser | Glu | Val | 110 | 115 | 120 |    |
| Glu | Arg | Ala | Val | Lys | Arg | Met | Arg | His | Leu | Ser | Thr | Gly | Thr | Met | 125 | 130 | 135 |    |
| Thr | Gly | Leu | Ala | Ile | Gln | Tyr | Ala | Leu | Asn | Ile | Ala | Phe | Ser | Glu | 140 | 145 | 150 |    |
| Ala | Glu | Gly | Ala | Arg | Pro | Leu | Arg | Glu | Asn | Val | Pro | Arg | Val | Ile |     |     |     |    |

|                 | 155                 | 160                 | 165 |
|-----------------|---------------------|---------------------|-----|
| Met Ile Val Thr | Asp Gly Arg Pro Gln | Asp Ser Val Ala Glu | Val |
|                 | 170                 | 175                 | 180 |
| Ala Ala Lys Ala | Arg Asp Thr Gly Ile | Leu Ile Phe Ala Ile | Gly |
|                 | 185                 | 190                 | 195 |
| Val Gly Gln Val | Asp Phe Asn Thr Leu | Lys Ser Ile Gly Ser | Glu |
|                 | 200                 | 205                 | 210 |
| Pro His Glu Asp | His Val Phe Leu Val | Ala Asn Phe Ser Gln | Ile |
|                 | 215                 | 220                 | 225 |
| Glu Thr Leu Thr | Ser Val Phe Gln Lys | Lys Leu Cys Thr Ala | His |
|                 | 230                 | 235                 | 240 |
| Met Cys Ser Thr | Leu Glu His Asn Cys | Ala His Phe Cys Ile | Asn |
|                 | 245                 | 250                 | 255 |
| Ile Pro Gly Ser | Tyr Val Cys Arg Cys | Lys Gln Gly Tyr Ile | Leu |
|                 | 260                 | 265                 | 270 |
| Asn Ser Asp Gln | Thr Thr Cys Arg Ile | Gln Asp Leu Cys Ala | Met |
|                 | 275                 | 280                 | 285 |
| Glu Asp His Asn | Cys Glu Gln Leu Cys | Val Asn Val Pro Gly | Ser |
|                 | 290                 | 295                 | 300 |
| Phe Val Cys Gln | Cys Tyr Ser Gly Tyr | Ala Leu Ala Glu Asp | Gly |
|                 | 305                 | 310                 | 315 |
| Lys Arg Cys Val | Ala Val Asp Tyr Cys | Ala Ser Glu Asn His | Gly |
|                 | 320                 | 325                 | 330 |
| Cys Glu His Glu | Cys Val Asn Ala Asp | Gly Ser Tyr Leu Cys | Gln |
|                 | 335                 | 340                 | 345 |
| Cys His Glu Gly | Phe Ala Leu Asn Pro | Asp Glu Lys Thr Cys | Thr |
|                 | 350                 | 355                 | 360 |
| Arg Ile Asn Tyr | Cys Ala Leu Asn Lys | Pro Gly Cys Glu His | Glu |
|                 | 365                 | 370                 | 375 |
| Cys Val Asn Met | Glu Glu Ser Tyr Tyr | Cys Arg Cys His Arg | Gly |
|                 | 380                 | 385                 | 390 |
| Tyr Thr Leu Asp | Pro Asn Gly Lys Thr | Cys Ser Arg Val Asp | His |
|                 | 395                 | 400                 | 405 |
| Cys Ala Gln Gln | Asp His Gly Cys Glu | Gln Leu Cys Leu Asn | Thr |
|                 | 410                 | 415                 | 420 |
| Glu Asp Ser Phe | Val Cys Gln Cys Ser | Glu Gly Phe Leu Ile | Asn |
|                 | 425                 | 430                 | 435 |
| Glu Asp Leu Lys | Thr Cys Ser Arg Val | Asp Tyr Cys Leu Leu | Ser |
|                 | 440                 | 445                 | 450 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | His | Gly | Cys | Glu | Tyr | Ser | Cys | Val | Asn | Met | Asp | Arg | Ser | Phe | 455 | 460 | 465 |
| Ala | Cys | Gln | Cys | Pro | Glu | Gly | His | Val | Leu | Arg | Ser | Asp | Gly | Lys | 470 | 475 | 480 |
| Thr | Cys | Ala | Lys | Leu | Asp | Ser | Cys | Ala | Leu | Gly | Asp | His | Gly | Cys | 485 | 490 | 495 |
| Glu | His | Ser | Cys | Val | Ser | Ser | Glu | Asp | Ser | Phe | Val | Cys | Gln | Cys | 500 | 505 | 510 |
| Phe | Glu | Gly | Tyr | Ile | Leu | Arg | Glu | Asp | Gly | Lys | Thr | Cys | Arg | Arg | 515 | 520 | 525 |
| Lys | Asp | Val | Cys | Gln | Ala | Ile | Asp | His | Gly | Cys | Glu | His | Ile | Cys | 530 | 535 | 540 |
| Val | Asn | Ser | Asp | Asp | Ser | Tyr | Thr | Cys | Glu | Cys | Leu | Glu | Gly | Phe | 545 | 550 | 555 |
| Arg | Leu | Ala | Glu | Asp | Gly | Lys | Arg | Cys | Arg | Arg | Lys | Asp | Val | Cys | 560 | 565 | 570 |
| Lys | Ser | Thr | His | His | Gly | Cys | Glu | His | Ile | Cys | Val | Asn | Asn | Gly | 575 | 580 | 585 |
| Asn | Ser | Tyr | Ile | Cys | Lys | Cys | Ser | Glu | Gly | Phe | Val | Leu | Ala | Glu | 590 | 595 | 600 |
| Asp | Gly | Arg | Arg | Cys | Lys | Lys | Cys | Thr | Glu | Gly | Pro | Ile | Asp | Leu | 605 | 610 | 615 |
| Val | Phe | Val | Ile | Asp | Gly | Ser | Lys | Ser | Leu | Gly | Glu | Glu | Asn | Phe | 620 | 625 | 630 |
| Glu | Val | Val | Lys | Gln | Phe | Val | Thr | Gly | Ile | Ile | Asp | Ser | Leu | Thr | 635 | 640 | 645 |
| Ile | Ser | Pro | Lys | Ala | Ala | Arg | Val | Gly | Leu | Leu | Gln | Tyr | Ser | Thr | 650 | 655 | 660 |
| Gln | Val | His | Thr | Glu | Phe | Thr | Leu | Arg | Asn | Phe | Asn | Ser | Ala | Lys | 665 | 670 | 675 |
| Asp | Met | Lys | Lys | Ala | Val | Ala | His | Met | Lys | Tyr | Met | Gly | Lys | Gly | 680 | 685 | 690 |
| Ser | Met | Thr | Gly | Leu | Ala | Leu | Lys | His | Met | Phe | Glu | Arg | Ser | Phe | 695 | 700 | 705 |
| Thr | Gln | Gly | Glu | Gly | Ala | Arg | Pro | Leu | Ser | Thr | Arg | Val | Pro | Arg | 710 | 715 | 720 |
| Ala | Ala | Ile | Val | Phe | Thr | Asp | Gly | Arg | Ala | Gln | Asp | Asp | Val | Ser | 725 | 730 | 735 |
| Glu | Trp | Ala | Ser | Lys | Ala | Lys | Ala | Asn | Gly | Ile | Thr | Met | Tyr | Ala | 740 | 745 | 750 |

|                 |                         |                     |
|-----------------|-------------------------|---------------------|
| Val Gly Val Gly | Lys Ala Ile Glu Glu Glu | Leu Gln Glu Ile Ala |
|                 | 755                     | 760 765             |
| Ser Glu Pro Thr | Asn Lys His Leu Phe Tyr | Ala Glu Asp Phe Ser |
|                 | 770                     | 775 780             |
| Thr Met Asp Glu | Ile Ser Glu Lys Leu Lys | Lys Gly Ile Cys Glu |
|                 | 785                     | 790 795             |
| Ala Leu Glu Asp | Ser Asp Gly Arg Gln Asp | Ser Pro Ala Gly Glu |
|                 | 800                     | 805 810             |
| Leu Pro Lys Thr | Val Gln Gln Pro Thr Glu | Ser Glu Pro Val Thr |
|                 | 815                     | 820 825             |
| Ile Asn Ile Gln | Asp Leu Leu Ser Cys Ser | Asn Phe Ala Val Gln |
|                 | 830                     | 835 840             |
| His Arg Tyr Leu | Phe Glu Glu Asp Asn Leu | Leu Arg Ser Thr Gln |
|                 | 845                     | 850 855             |
| Lys Leu Ser His | Ser Thr Lys Pro Ser Gly | Ser Pro Leu Glu Glu |
|                 | 860                     | 865 870             |
| Lys His Asp Gln | Cys Lys Cys Glu Asn Leu | Ile Met Phe Gln Asn |
|                 | 875                     | 880 885             |
| Leu Ala Asn Glu | Glu Val Arg Lys Leu Thr | Gln Arg Leu Glu Glu |
|                 | 890                     | 895 900             |
| Met Thr Gln Arg | Met Glu Ala Leu Glu Asn | Arg Leu Arg Tyr Arg |
|                 | 905                     | 910 915             |

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ttggactggg gttgctggct gggctggctc tcttgtacca ccgccggggc 950  
aaggccctgg aggagccagc caatgatatc aaggaggatg ccattgctcc 1000  
ccggaccctg ccctggccca agagctcaga cacaatctcc aagaatggga 1050  
ccctttcttc tgtcacctcc gcacgagccc tccggccacc ccattggcct 1100  
cccaggcctg gtgcattgac cccacgccc agtctctcca gccaggcct 1150



gccctcacca agactgccca cgacagatgg ggcccaccct caaccaatat 1200  
 ccccatcccc tgggtggggtt tcttcctctg gcttgagccg catgggtgct 1250  
 gtgcctgtga tgggtgcctgc ccagagtcaa gctggctctc tggatatgatg 1300  
 accccaccac tcattggcta aaggatttgg ggtctctcct tcctataagg 1350  
 gtcacctcta gcacagaggc ctgagtcatg ggaaagagtc acactcctga 1400  
 cccttagtac tctgccccca cctctcttta ctgtgggaaa accatctcag 1450  
 taagacctaa gtgtccagga gacagaagga gaagaggaag tggatctgga 1500  
 attgggagga gcctccapcc acccctgact cctccttatg aagccagctg 1550  
 ctgaaattag ctactcacca agagtgaggg gcagagactt ccagtcactg 1600  
 agtctcccag gcccccttga tctgtacccc acccctatct aacaccaccc 1650  
 ttggctccca ctccagctcc ctgtattgat ataacctgtc aggtctggctt 1700  
 ggttagggttt tactggggca gaggataggg aatctcttat taaaactaac 1750  
 atgaaatatg tgttgttttc atttgcaa ataaataaag atacataatg 1800  
 tttgtatgaa aaa 1813

<210> 39  
 <211> 390  
 <212> PRT  
 <213> Homo Sapien

<400> 39  
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 Leu Phe Leu Gly Leu Ser Ala Leu Ala Pro Pro Ser Arg Ala Gln  
 20 25 30  
 Leu Gln Leu His Leu Pro Ala Asn Arg Leu Gln Ala Val Glu Gly  
 35 40 45  
 Gly Glu Val Val Leu Pro Ala Trp Tyr Thr Leu His Gly Glu Val  
 50 55 60  
 Ser Ser Ser Gln Pro Trp Glu Val Pro Phe Val Met Trp Phe Phe  
 65 70 75  
 Lys Gln Lys Glu Lys Glu Asp Gln Val Leu Ser Tyr Ile Asn Gly  
 80 85 90  
 Val Thr Thr Ser Lys Pro Gly Val Ser Leu Val Tyr Ser Met Pro  
 95 100 105  
 Ser Arg Asn Leu Ser Leu Arg Leu Glu Gly Leu Gln Glu Lys Asp  
 110 115 120  
 Ser Gly Pro Tyr Ser Cys Ser Val Asn Val Gln Asp Lys Gln Gly

|   |     |     |     |
|---|-----|-----|-----|
|   | 125 | 130 | 135 |
| Lys Ser Arg Gly His Ser Ile Lys Thr Leu Glu Leu Asn Val Leu | 140 | 145 | 150 |
| Val Pro Pro Ala Pro Pro Ser Cys Arg Leu Gln Gly Val Pro His | 155 | 160 | 165 |
| Val Gly Ala Asn Val Thr Leu Ser Cys Gln Ser Pro Arg Ser Lys | 170 | 175 | 180 |
| Pro Ala Val Gln Tyr Gln Trp Asp Arg Gln Leu Pro Ser Phe Gln | 185 | 190 | 195 |
| Thr Phe Phe Ala Pro Ala Leu Asp Val Ile Arg Gly Ser Leu Ser | 200 | 205 | 210 |
| Leu Thr Asn Leu Ser Ser Ser Met Ala Gly Val Tyr Val Cys Lys | 215 | 220 | 225 |
| Ala His Asn Glu Val Gly Thr Ala Gln Cys Asn Val Thr Leu Glu | 230 | 235 | 240 |
| Val Ser Thr Gly Pro Gly Ala Ala Val Val Ala Gly Ala Val Val | 245 | 250 | 255 |
| Gly Thr Leu Val Gly Leu Gly Leu Leu Ala Gly Leu Val Leu Leu | 260 | 265 | 270 |
| Tyr His Arg Arg Gly Lys Ala Leu Glu Glu Pro Ala Asn Asp Ile | 275 | 280 | 285 |
| Lys Glu Asp Ala Ile Ala Pro Arg Thr Leu Pro Trp Pro Lys Ser | 290 | 295 | 300 |
| Ser Asp Thr Ile Ser Lys Asn Gly Thr Leu Ser Ser Val Thr Ser | 305 | 310 | 315 |
| Ala Arg Ala Leu Arg Pro Pro His Gly Pro Pro Arg Pro Gly Ala | 320 | 325 | 330 |
| Leu Thr Pro Thr Pro Ser Leu Ser Ser Gln Ala Leu Pro Ser Pro | 335 | 340 | 345 |
| Arg Leu Pro Thr Thr Asp Gly Ala His Pro Gln Pro Ile Ser Pro | 350 | 355 | 360 |
| Ile Pro Gly Gly Val Ser Ser Ser Gly Leu Ser Arg Met Gly Ala | 365 | 370 | 375 |
| Val Pro Val Met Val Pro Ala Gln Ser Gln Ala Gly Ser Leu Val | 380 | 385 | 390 |

<210> 40

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

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 <210> 41  
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 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic Oligonucleotide Probe  
  
 <400> 41  
 attgtgggcc ttgcagacat agac 24  
 <210> 42  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic Oligonucleotide Probe  
  
 <400> 42  
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 <210> 43  
 <211> 18  
 <212> DNA  
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 <223> Synthetic Oligonucleotide Probe  
  
 <400> 43  
 gtgtgacaca gcgtgggc 18  
  
 <210> 44  
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 <223> Synthetic Oligonucleotide Probe  
  
 <400> 44  
 gaccggcagg cttctgcg 18  
  
 <210> 45  
 <211> 25  
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 <223> Synthetic Oligonucleotide Probe  
  
 <400> 45  
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 <210> 46

<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Oligonucleotide Probe

<400> 46  
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<210> 47  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Oligonucleotide Probe

<400> 47  
ccgactacga ctggttcttc atcatgcagg atgacacata tgtgc 45

<210> 48  
<211> 2822  
<212> DNA  
<213> Homo Sapien

<400> 48  
cgccaccact gcggccaccg ccaatgaaac gcctcccgt cctagtgggtt 50  
ttttccactt tgttgaattg ttcctatact caaaattgca ccaagacacc 100  
ttgtctccca aatgcaaaat gtgaaatacg caatggaatt gaagcctgct 150  
attgcaacat gggattttca ggaaatggtg tcacaatttg tgaagatgat 200  
aatgaatgtg gaaatttaac tcagtcctgt ggcgaaaatg ctaattgcac 250  
taacacagaa ggaagttatt attgtatgtg tgtacctggc ttcagatcca 300  
gcagtaacca agacagggtt atcactaatg atggaaccgt ctgtatagaa 350  
aatgtgaatg caaactgcc a ttagataat gtctgtatag ctgcaaatat 400  
taataaaaact ttaacaaaaa tcagatccat aaaagaacct gtggctttgc 450  
tacaagaagt ctatagaaat tctgtgacag atctttcacc aacagatata 500  
attacatata tagaaatatt agctgaatca tcttcattac taggttacia 550  
gaacaacact atctcagcca aggacaccct ttctaactca actcttactg 600  
aatttgtaaa aaccgtgaat aattttgttc aaagggatac atttgtagtt 650  
tgggacaagt tatctgtgaa tcataggaga acacatctta caaaactcat 700  
gcacactggt gaacaagcta cttaaggat atcccagagc ttccaaaaga 750  
ccacagagtt tgatacaaat tcaacggata tagctctcaa agttttcttt 800

tttgattcat ataacatgaa acatattcat cctcatatga atatggatgg 850  
 agactacata aatatatttc caaagagaaa agctgcatat gattcaaag 900  
 gcaatggtgc agttgcattt ttatattata agagtattgg tcctttgctt 950  
 tcatcatctg acaacttctt attgaaacct caaaattatg ataattctga 1000  
 agaggaggaa agagtcatat cttcagtaat ttcagttctca atgagctcaa 1050  
 acccaccac attatatgaa cttgaaaaaa taacatttac attaagtcac 1100  
 cgaaagggtca cagataggta taggagtcta tgtgcattttt ggaattactc 1150  
 acctgatacc atgaatggca gctgggtcttc agagggctgt gagctgacat 1200  
 actcaaatga gaccacacc tcatgccgct gtaatcacct gacacatttt 1250  
 gcaattttga tgtcctctgg tccttcattt ggtattaaag attataatat 1300  
 tcttacaagg atcactcaac taggaataat tatttctactg atttgtcttg 1350  
 ccatatgcat ttttaccttc tggttcttca gtgaaattca aagcaccagg 1400  
 acaacaattc acaaaaatct ttgctgtagc ctatttcttg ctgaacttgt 1450  
 ttttcttggt gggatcaata caaatactaa taagctcttc tgttcaatca 1500  
 ttgccggact gctacactac ttcttttttag ctgcttttgc atggatgtgc 1550  
 attgaaggca tacatctcta tctcattggt gtgggtgtca tctacaacia 1600  
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 aaagtatggt ggcttagcac cgaaaacaac tttatttgga gttttatagg 1750  
 accagcatgc ctaatcattc ttgttaactc cttggctttt ggagtcac 1800  
 tatacaaagt ttttcgtcac actgcagggt tgaaaccaga agttagttgc 1850  
 tttgagaaca taaggctctg tgcaagagga gccctcgctc ttctgttcct 1900  
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 tggttacagc ttacctcttc acagtcagca atgctttcca ggggatgttc 2000  
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 agagaatggt ggataattac aactgcacaa aaataaaaaat tccaagctgt 2150  
 ggatgaccaa tgtataaaaa tgactcatca aattatccaa ttattaacta 2200  
 ctagacaaaa agtattttta atcagttttt ctgtttatgc tataggaact 2250  
 gtagataata aggtaaaatt atgtatcata tagatatact atgtttttct 2300

atgtgaaata gttctgtcaa aaatagtatt gcagatattt ggaaagtaat 2350  
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 acacgagaag tatatgaatg tcctgaagga aaccactggc ttgatatttc 2450  
 tgtgactcgt gttgcctttg aaactagtcc cctaccacct cggtaatgag 2500  
 ctccattaca gaaagtggaa cataagagaa tgaaggggca gaatatcaaa 2550  
 cagtgaaaag ggaatgataa gatgtatttt gaatgaactg ttttttctgt 2600  
 agactagctg agaaattggt gacataaaat aaagaattga agaaacacat 2650  
 tttaccattt tgtgaattgt tctgaactta aatgtccact aaaacaactt 2700  
 agacttctgt ttgctaaatc tgtttctttt tctaatatcc taaaaaaaaa 2750  
 aaaaagggtt acctccacaa attgaaaaaa aaaaaaaaaa aaaaaaaaaa 2800  
 aaaaaaaaaa aaaaaaaaaa aa 2822

<210> 49  
 <211> 690  
 <212> PRT  
 <213> Homo Sapien

<400> 49  
 Met Lys Arg Leu Pro Leu Leu Val Val Phe Ser Thr Leu Leu Asn  
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 Cys Ser Tyr Thr Gln Asn Cys Thr Lys Thr Pro Cys Leu Pro Asn  
 20 25 30  
 Ala Lys Cys Glu Ile Arg Asn Gly Ile Glu Ala Cys Tyr Cys Asn  
 35 40 45  
 Met Gly Phe Ser Gly Asn Gly Val Thr Ile Cys Glu Asp Asp Asn  
 50 55 60  
 Glu Cys Gly Asn Leu Thr Gln Ser Cys Gly Glu Asn Ala Asn Cys  
 65 70 75  
 Thr Asn Thr Glu Gly Ser Tyr Tyr Cys Met Cys Val Pro Gly Phe  
 80 85 90  
 Arg Ser Ser Ser Asn Gln Asp Arg Phe Ile Thr Asn Asp Gly Thr  
 95 100 105  
 Val Cys Ile Glu Asn Val Asn Ala Asn Cys His Leu Asp Asn Val  
 110 115 120  
 Cys Ile Ala Ala Asn Ile Asn Lys Thr Leu Thr Lys Ile Arg Ser  
 125 130 135  
 Ile Lys Glu Pro Val Ala Leu Leu Gln Glu Val Tyr Arg Asn Ser  
 140 145 150

|   |                         |     |     |     |
|---|-------------------------|-----|-----|-----|
| Val Thr Asp Leu Ser Pro Thr Asp Ile                         | Ile Thr Tyr Ile Glu Ile | 155 | 160 | 165 |
| Leu Ala Glu Ser Ser Ser Leu Leu Gly Tyr Lys Asn Asn Thr Ile |                         | 170 | 175 | 180 |
| Ser Ala Lys Asp Thr Leu Ser Asn Ser Thr Leu Thr Glu Phe Val |                         | 185 | 190 | 195 |
| Lys Thr Val Asn Asn Phe Val Gln Arg Asp Thr Phe Val Val Trp |                         | 200 | 205 | 210 |
| Asp Lys Leu Ser Val Asn His Arg Arg Thr His Leu Thr Lys Leu |                         | 215 | 220 | 225 |
| Met His Thr Val Glu Gln Ala Thr Leu Arg Ile Ser Gln Ser Phe |                         | 230 | 235 | 240 |
| Gln Lys Thr Thr Glu Phe Asp Thr Asn Ser Thr Asp Ile Ala Leu |                         | 245 | 250 | 255 |
| Lys Val Phe Phe Phe Asp Ser Tyr Asn Met Lys His Ile His Pro |                         | 260 | 265 | 270 |
| His Met Asn Met Asp Gly Asp Tyr Ile Asn Ile Phe Pro Lys Arg |                         | 275 | 280 | 285 |
| Lys Ala Ala Tyr Asp Ser Asn Gly Asn Val Ala Val Ala Phe Leu |                         | 290 | 295 | 300 |
| Tyr Tyr Lys Ser Ile Gly Pro Leu Leu Ser Ser Ser Asp Asn Phe |                         | 305 | 310 | 315 |
| Leu Leu Lys Pro Gln Asn Tyr Asp Asn Ser Glu Glu Glu Glu Arg |                         | 320 | 325 | 330 |
| Val Ile Ser Ser Val Ile Ser Val Ser Met Ser Ser Asn Pro Pro |                         | 335 | 340 | 345 |
| Thr Leu Tyr Glu Leu Glu Lys Ile Thr Phe Thr Leu Ser His Arg |                         | 350 | 355 | 360 |
| Lys Val Thr Asp Arg Tyr Arg Ser Leu Cys Ala Phe Trp Asn Tyr |                         | 365 | 370 | 375 |
| Ser Pro Asp Thr Met Asn Gly Ser Trp Ser Ser Glu Gly Cys Glu |                         | 380 | 385 | 390 |
| Leu Thr Tyr Ser Asn Glu Thr His Thr Ser Cys Arg Cys Asn His |                         | 395 | 400 | 405 |
| Leu Thr His Phe Ala Ile Leu Met Ser Ser Gly Pro Ser Ile Gly |                         | 410 | 415 | 420 |
| Ile Lys Asp Tyr Asn Ile Leu Thr Arg Ile Thr Gln Leu Gly Ile |                         | 425 | 430 | 435 |
| Ile Ile Ser Leu Ile Cys Leu Ala Ile Cys Ile Phe Thr Phe Trp |                         | 440 | 445 | 450 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Phe | Phe | Ser | Glu | Ile | Gln | Ser | Thr | Arg | Thr | Thr | Ile | His | Lys | Asn |  |
|     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     | 465 |  |
| Leu | Cys | Cys | Ser | Leu | Phe | Leu | Ala | Glu | Leu | Val | Phe | Leu | Val | Gly |  |
|     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Ile | Asn | Thr | Asn | Thr | Asn | Lys | Leu | Phe | Cys | Ser | Ile | Ile | Ala | Gly |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |  |
| Leu | Leu | His | Tyr | Phe | Phe | Leu | Ala | Ala | Phe | Ala | Trp | Met | Cys | Ile |  |
|     |     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |  |
| Glu | Gly | Ile | His | Leu | Tyr | Leu | Ile | Val | Val | Gly | Val | Ile | Tyr | Asn |  |
|     |     |     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |  |
| Lys | Gly | Phe | Leu | His | Lys | Asn | Phe | Tyr | Ile | Phe | Gly | Tyr | Leu | Ser |  |
|     |     |     |     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |  |
| Pro | Ala | Val | Val | Val | Gly | Phe | Ser | Ala | Ala | Leu | Gly | Tyr | Arg | Tyr |  |
|     |     |     |     | 545 |     |     |     |     | 550 |     |     |     |     | 555 |  |
| Tyr | Gly | Thr | Thr | Lys | Val | Cys | Trp | Leu | Ser | Thr | Glu | Asn | Asn | Phe |  |
|     |     |     |     | 560 |     |     |     |     | 565 |     |     |     |     | 570 |  |
| Ile | Trp | Ser | Phe | Ile | Gly | Pro | Ala | Cys | Leu | Ile | Ile | Leu | Val | Asn |  |
|     |     |     |     | 575 |     |     |     |     | 580 |     |     |     |     | 585 |  |
| Leu | Leu | Ala | Phe | Gly | Val | Ile | Ile | Tyr | Lys | Val | Phe | Arg | His | Thr |  |
|     |     |     |     | 590 |     |     |     |     | 595 |     |     |     |     | 600 |  |
| Ala | Gly | Leu | Lys | Pro | Glu | Val | Ser | Cys | Phe | Glu | Asn | Ile | Arg | Ser |  |
|     |     |     |     | 605 |     |     |     |     | 610 |     |     |     |     | 615 |  |
| Cys | Ala | Arg | Gly | Ala | Leu | Ala | Leu | Leu | Phe | Leu | Leu | Gly | Thr | Thr |  |
|     |     |     |     | 620 |     |     |     |     | 625 |     |     |     |     | 630 |  |
| Trp | Ile | Phe | Gly | Val | Leu | His | Val | Val | His | Ala | Ser | Val | Val | Thr |  |
|     |     |     |     | 635 |     |     |     |     | 640 |     |     |     |     | 645 |  |
| Ala | Tyr | Leu | Phe | Thr | Val | Ser | Asn | Ala | Phe | Gln | Gly | Met | Phe | Ile |  |
|     |     |     |     | 650 |     |     |     |     | 655 |     |     |     |     | 660 |  |
| Phe | Leu | Phe | Leu | Cys | Val | Leu | Ser | Arg | Lys | Ile | Gln | Glu | Glu | Tyr |  |
|     |     |     |     | 665 |     |     |     |     | 670 |     |     |     |     | 675 |  |
| Tyr | Arg | Leu | Phe | Lys | Asn | Val | Pro | Cys | Cys | Phe | Gly | Cys | Leu | Arg |  |
|     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |     | 690 |  |

<210> 50  
 <211> 589  
 <212> DNA  
 <213> Homo Sapien

<220>  
 <221> unsure  
 <222> 61  
 <223> unknown base



<400> 50  
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 atttccaaag ngaaaagccg gcatatggat tcaaattggca atgttgagc 100  
 tgcattttta tattataaga gtattgggtcc ctttgctttc atcatctgac 150  
 aacttcttat tgaaacctca aaattatgat aattctgaag aggaggaaag 200  
 agtcatatct tcagtaattt cagtctcaat gagtcaaac ccacccacat 250  
 tatatgaact tgaaaaaata acatttacat taagtcacg aaaggtcaca 300  
 gatagggtata ggagtctatg tggcattttg gaatactcac ctgataccat 350  
 gaatggcagc tgggtctcag agggctgtga gctgacatac tcaaattgaga 400  
 cccacacctc atgccgctgt aatcacctga cacattttgc aattttgatg 450  
 tcctctgggc cttccattgg tattaaagat tataatatcc ttacaaggat 500  
 cactcaacta ggaataatta tttcactgat ttgtcttgcc atatgcattt 550  
 ttaccttctg gttcttcagt gaaattcaaa gcaccagga 589

<210> 51  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

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 ggtaatgagc tccattacag 20

<210> 52  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 52  
 ggagtagaaa gcgcatgg 18

<210> 53  
 <211> 22  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 53  
 cacctgatac catgaatggc ag 22

<210> 54

<211> 18  
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 <400> 54  
 cgagctcgaa ttaattcg 18  
  
 <210> 55  
 <211> 18  
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 <223> Synthetic Oligonucleotide Probe  
  
 <400> 55  
 ggatctcctg agctcagg 18  
  
 <210> 56  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence  
  
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 <223> Synthetic Oligonucleotide Probe  
  
 <400> 56  
 cctagttgag tgatccttgt aag 23  
  
 <210> 57  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic Oligonucleotide Probe  
  
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 <210> 58  
 <211> 2137  
 <212> DNA  
 <213> Homo Sapien  
  
 <400> 58  
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 gaaaccgggc cgctaagcga ggcctcctcc tcccgcagat ccgaacggcc 100  
 tgggcggggt caccgccggt gggacaagaa gccgccgect gcctgcccgg 150  
 gcccggggag ggggctgggg ctggggccgg aggcggggtg tgagtgggtg 200  
 tgtgcggggg gcggaggctt gatgcaatcc cgataagaaa tgctcgggtg 250  
 tcttgggcac ctaccctggg ggcccgtgaa gcgctactat ataaggctgc 300

cgccccggag ccgccgcgcc gtcagagcag gagcgctgcg tccaggatct 350  
 agggccacga ccatcccaac ccggcactca cagccccgca gcgcattccc 400  
 gtcgcccgcc agcctcccgc acccccattcg ccggagctgc gccgagagcc 450  
 ccagggagggt gccatgcgga gcgggtgtgt ggtgggtccac gtatggatcc 500  
 tggccggcct ctggctggcc gtggccgggc gcccctcgc cttctcggac 550  
 gcggggcccc acgtgcacta cggctggggc gaccccatcc gcctgcggca 600  
 cctgtacacc tccggcccc cgggctctc cagctgcttc ctgcgcattcc 650  
 gtgccgacgg cgtcgtggac tgcgcgcggg gccagagcgc gcacagtttg 700  
 ctggagatca aggcagtcgc tctgcggacc gtggccatca agggcgtgca 750  
 cagcgtgcgg tacctctgca tgggcgccga cggcaagatg caggggctgc 800  
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 ggctacaatg tgtaccgatc cgagaagcac cgcctcccgg tctccctgag 900  
 cagtgccaaa cagcggcagc tgtacaagaa cagaggcttt cttccactct 950  
 ctcatttctt gcccatgctg cccatgggtcc cagaggagcc tgaggacctc 1000  
 agggggccact tggaatctga catgttctct tcgcccctgg agaccgacag 1050  
 catggacceca tttgggcttg tcaccggact ggaggccgtg aggagtccca 1100  
 gctttgagaa gtaactgaga ccatgcccg gctctttcac tgctgccagg 1150  
 ggctgtggta cctgcagcgt gggggacgtg cttctacaag aacagtcctg 1200  
 agtccacgtt ctgttttagct ttaggaagaa acatctagaa gttgtacata 1250  
 ttcagagttt tccattggca gtgccagttt ctagccaata gacttgtctg 1300  
 atcataacat tgtaagcctg tagcttgccc agctgctgcc tgggccccca 1350  
 ttctgctccc tcgaggttgc tggacaagct gctgcactgt ctcagttctg 1400  
 cttgaatacc tccatcgatg gggaactcac ttcctttgga aaaattctta 1450  
 tgtcaagctg aaattctcta attttttctc atcacttccc caggagcagc 1500  
 cagaagacag gcagtagttt taatttcagg aacaggatgat ccactctgta 1550  
 aaacagcagg taaatttcac tcaaccccat gtgggaattg atctatatct 1600  
 ctacttcag ggaccatttg ccttcccaa atccctccag gccagaactg 1650  
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 cccactcca gccctgggac aacttgagaa tccccctga ggccagttct 1750  
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ccatctccca gccaccagc cctctgcca cctcacatgc ctcccatgg 1850  
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aaaaatcagg aaaagaaaag atttgaagac cccaagtctt gtcaataact 1950  
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ggttttccaa catgatattt atgagtaatt tattttgata tgtacatctc 2050  
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<212> PRT  
<213> Homo Sapien

<400> 59  
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20 25 30  
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35 40 45  
His Leu Tyr Thr Ser Gly Pro His Gly Leu Ser Ser Cys Phe Leu  
50 55 60  
Arg Ile Arg Ala Asp Gly Val Val Asp Cys Ala Arg Gly Gln Ser  
65 70 75  
Ala His Ser Leu Leu Glu Ile Lys Ala Val Ala Leu Arg Thr Val  
80 85 90  
Ala Ile Lys Gly Val His Ser Val Arg Tyr Leu Cys Met Gly Ala  
95 100 105  
Asp Gly Lys Met Gln Gly Leu Leu Gln Tyr Ser Glu Glu Asp Cys  
110 115 120  
Ala Phe Glu Glu Glu Ile Arg Pro Asp Gly Tyr Asn Val Tyr Arg  
125 130 135  
Ser Glu Lys His Arg Leu Pro Val Ser Leu Ser Ser Ala Lys Gln  
140 145 150  
Arg Gln Leu Tyr Lys Asn Arg Gly Phe Leu Pro Leu Ser His Phe  
155 160 165  
Leu Pro Met Leu Pro Met Val Pro Glu Glu Pro Glu Asp Leu Arg  
170 175 180  
Gly His Leu Glu Ser Asp Met Phe Ser Ser Pro Leu Glu Thr Asp  
185 190 195

Ser Met Asp Pro Phe Gly Leu Val Thr Gly Leu Glu Ala Val Arg  
200 205 210

Ser Pro Ser Phe Glu Lys  
215

<210> 60  
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<213> Artificial Sequence

<220>  
<223> Synthetic Oligonucleotide Probe

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<210> 61  
<211> 42  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Oligonucleotide Probe

<400> 61  
gcctccccgt ctccctgagc agtgccaaac agcggcagtg ta 42

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<212> DNA  
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<220>  
<223> Synthetic Oligonucleotide Probe

<400> 62  
ccagtccggt gacaagccca aa 22

<210> 63  
<211> 1295  
<212> DNA  
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<400> 63  
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agccgccacc gcctcctcct gctgctgctg cgctacctgg tggtcgccct 150  
gggctatcat aaggcctatg ggttttctgc cccaaaagac caacaagtag 200  
tcacagcagt agagtaccaa gaggctatgt tagcctgcaa aaccccaaag 250  
aagactgttt cctccagatt agagtggaag aaactgggtc ggagtgtctc 300  
ctttgtctac tatcaacaga ctcttcaagg tgattttaaa aatcgagctg 350  
agatgataga tttcaatatc cggatcaaaa atgtgacaag aagtgatgcg 400

gggaaatatc gttgtgaagt tagtgcccca tctgagcaag gccaaaacct 450  
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 ggcggatcac gaggtcagga gttctagacc agtctggcca atatggtgaa 1050  
 acccatctc tactaaaata caaaaattag ctgggcatgg tggcatgtgc 1100  
 ctgcagttcc agctgcttgg gagacaggag aatcacttga acccgggagg 1150  
 cggagggttc agtgagctga gatcacgcca ctgcagtcca gcctgggtaa 1200  
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 <211> 312  
 <212> PRT  
 <213> Homo Sapien

<400> 64  
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 20 25 30  
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 35 40 45  
 Ala Ile Leu Ala Cys Lys Thr Pro Lys Lys Thr Val Ser Ser Arg  
 50 55 60  
 Leu Glu Trp Lys Lys Leu Gly Arg Ser Val Ser Phe Val Tyr Tyr  
 65 70 75  
 Gln Gln Thr Leu Gln Gly Asp Phe Lys Asn Arg Ala Glu Met Ile

| 80  |     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Phe | Asn | Ile | Arg | Ile | Lys | Asn | Val | Thr | Arg | Ser | Asp | Ala | Gly |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| Lys | Tyr | Arg | Cys | Glu | Val | Ser | Ala | Pro | Ser | Glu | Gln | Gly | Gln | Asn |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |
| Leu | Glu | Glu | Asp | Thr | Val | Thr | Leu | Glu | Val | Leu | Val | Ala | Pro | Ala |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |
| Val | Pro | Ser | Cys | Glu | Val | Pro | Ser | Ser | Ala | Leu | Ser | Gly | Thr | Val |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |
| Val | Glu | Leu | Arg | Cys | Gln | Asp | Lys | Glu | Gly | Asn | Pro | Ala | Pro | Glu |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |
| Tyr | Thr | Trp | Phe | Lys | Asp | Gly | Ile | Arg | Leu | Leu | Glu | Asn | Pro | Arg |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |
| Leu | Gly | Ser | Gln | Ser | Thr | Asn | Ser | Ser | Tyr | Thr | Met | Asn | Thr | Lys |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |
| Thr | Gly | Thr | Leu | Gln | Phe | Asn | Thr | Val | Ser | Lys | Leu | Asp | Thr | Gly |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |
| Glu | Tyr | Ser | Cys | Glu | Ala | Arg | Asn | Ser | Val | Gly | Tyr | Arg | Arg | Cys |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |
| Pro | Gly | Lys | Arg | Met | Gln | Val | Asp | Asp | Leu | Asn | Ile | Ser | Gly | Ile |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Ile | Ala | Ala | Val | Val | Val | Val | Ala | Leu | Val | Ile | Ser | Val | Cys | Gly |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |
| Leu | Gly | Val | Cys | Tyr | Ala | Gln | Arg | Lys | Gly | Tyr | Phe | Ser | Lys | Glu |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |
| Thr | Ser | Phe | Gln | Lys | Ser | Asn | Ser | Ser | Ser | Lys | Ala | Thr | Thr | Met |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |
| Ser | Glu | Asn | Val | Gln | Trp | Leu | Thr | Pro | Val | Ile | Pro | Ala | Leu | Trp |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |
| Lys | Ala | Ala | Ala | Gly | Gly | Ser | Arg | Gly | Gln | Glu | Phe |     |     |     |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     |     |

<210> 65

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 65

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<210> 66

<211> 23  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <223> Synthetic Oligonucleotide Probe

<400> 66  
 acctgcgata tccaacagaa ttg 23

<210> 67  
 <211> 48  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 67  
 ggaagaggat acagtcactc tggaagtatt agtggctcca gcagttcc 48

<210> 68  
 <211> 2639  
 <212> DNA  
 <213> Homo Sapien

<400> 68  
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 gctccacagc ccggaccctg gcatcatgct gctattcctg caaatactga 150  
 agaagcatgg gatttaaata ttttacttct aaataaatga attactcaat 200  
 ctctatgac catctataca tactccacct tcaaaaagta catcaatatt 250  
 atatcattaa ggaaatagta accttctctt ctccaatatg catgacattt 300  
 ttggacaatg caattgtggc actggcactt atttcagtga agaaaaactt 350  
 tgtggttcta tggcattcat catttgacaa atgcaagcat cttccttata 400  
 aatcagctcc tattgaactt actagcactg actgtggaat ccttaagggc 450  
 ccattacatt tctgaagaag aaagctaaga tgaaggacat gccactccga 500  
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 ttacaccag atccatttat atggaagcat ctacagtgga ttgtaatgat 650  
 ttaggtcttt taactttccc agccagattg ccagctaaca cacagattct 700  
 tctctacag actaacaata ttgcaaaaat tgaatactcc acagactttc 750  
 cagtaaacct tactggcctg gatttatctc aaaacaattt atcttcagtc 800  
 accaatatta atgtaaaaaa gatgcctcag ctcctttctg tgtacctaga 850



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acttacaaga actctatatt aatcacaact tgctttctac aatttcacct 950  
ggagccttta ttggcctaca taatcttctt cgacttcac tcaattcaaa 1000  
tagattgcag atgatcaaca gtaagtgggt tgatgctctt ccaaactctag 1050  
agattctgat gattggggaa aatccaatta tcagaatcaa agacatgaac 1100  
tttaagcctc ttatcaatct tcgcagcctg gttatagctg gtataaacct 1150  
cacagaaata ccagataacg ccttggttgg actggaaaac ttagaaagca 1200  
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aatacgaagg ggtgatttta gcaatatgct acacttaaaa gagttgggga 1350  
taaataatat gcctgagctg atttccatcg atagtcttgc tgtggataac 1400  
ctgccagatt taagaaaaat agaagctact aacaacccta gattgtctta 1450  
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tgaacagcaa tgctctcagt gccctgtacc atggtaccat tgagtctctg 1550  
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 tgagctttat cctcctctga taaatctctg ggaagcagga aaagaaaaaa 2550  
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<210> 69  
 <211> 708  
 <212> PRT  
 <213> Homo Sapien

<400> 69  
 Met Lys Asp Met Pro Leu Arg Ile His Val Leu Leu Gly Leu Ala  
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 20 25 30  
 Arg Leu Cys Thr Cys Glu Ile Arg Pro Trp Phe Thr Pro Arg Ser  
 35 40 45  
 Ile Tyr Met Glu Ala Ser Thr Val Asp Cys Asn Asp Leu Gly Leu  
 50 55 60  
 Leu Thr Phe Pro Ala Arg Leu Pro Ala Asn Thr Gln Ile Leu Leu  
 65 70 75  
 Leu Gln Thr Asn Asn Ile Ala Lys Ile Glu Tyr Ser Thr Asp Phe  
 80 85 90  
 Pro Val Asn Leu Thr Gly Leu Asp Leu Ser Gln Asn Asn Leu Ser  
 95 100 105  
 Ser Val Thr Asn Ile Asn Val Lys Lys Met Pro Gln Leu Leu Ser  
 110 115 120  
 Val Tyr Leu Glu Glu Asn Lys Leu Thr Glu Leu Pro Glu Lys Cys  
 125 130 135  
 Leu Ser Glu Leu Ser Asn Leu Gln Glu Leu Tyr Ile Asn His Asn  
 140 145 150  
 Leu Leu Ser Thr Ile Ser Pro Gly Ala Phe Ile Gly Leu His Asn  
 155 160 165  
 Leu Leu Arg Leu His Leu Asn Ser Asn Arg Leu Gln Met Ile Asn  
 170 175 180  
 Ser Lys Trp Phe Asp Ala Leu Pro Asn Leu Glu Ile Leu Met Ile  
 185 190 195  
 Gly Glu Asn Pro Ile Ile Arg Ile Lys Asp Met Asn Phe Lys Pro

|                 | 200                 |                         | 205 |  | 210 |
|-----------------|---------------------|-------------------------|-----|--|-----|
| Leu Ile Asn Leu | Arg Ser Leu Val Ile | Ala Gly Ile Asn Leu Thr |     |  |     |
|                 | 215                 |                         | 220 |  | 225 |
| Glu Ile Pro Asp | Asn Ala Leu Val Gly | Leu Glu Asn Leu Glu Ser |     |  |     |
|                 | 230                 |                         | 235 |  | 240 |
| Ile Ser Phe Tyr | Asp Asn Arg Leu Ile | Lys Val Pro His Val Ala |     |  |     |
|                 | 245                 |                         | 250 |  | 255 |
| Leu Gln Lys Val | Val Asn Leu Lys Phe | Leu Asp Leu Asn Lys Asn |     |  |     |
|                 | 260                 |                         | 265 |  | 270 |
| Pro Ile Asn Arg | Ile Arg Arg Gly Asp | Phe Ser Asn Met Leu His |     |  |     |
|                 | 275                 |                         | 280 |  | 285 |
| Leu Lys Glu Leu | Gly Ile Asn Asn Met | Pro Glu Leu Ile Ser Ile |     |  |     |
|                 | 290                 |                         | 295 |  | 300 |
| Asp Ser Leu Ala | Val Asp Asn Leu Pro | Asp Leu Arg Lys Ile Glu |     |  |     |
|                 | 305                 |                         | 310 |  | 315 |
| Ala Thr Asn Asn | Pro Arg Leu Ser Tyr | Ile His Pro Asn Ala Phe |     |  |     |
|                 | 320                 |                         | 325 |  | 330 |
| Phe Arg Leu Pro | Lys Leu Glu Ser Leu | Met Leu Asn Ser Asn Ala |     |  |     |
|                 | 335                 |                         | 340 |  | 345 |
| Leu Ser Ala Leu | Tyr His Gly Thr Ile | Glu Ser Leu Pro Asn Leu |     |  |     |
|                 | 350                 |                         | 355 |  | 360 |
| Lys Glu Ile Ser | Ile His Ser Asn Pro | Ile Arg Cys Asp Cys Val |     |  |     |
|                 | 365                 |                         | 370 |  | 375 |
| Ile Arg Trp Met | Asn Met Asn Lys Thr | Asn Ile Arg Phe Met Glu |     |  |     |
|                 | 380                 |                         | 385 |  | 390 |
| Pro Asp Ser Leu | Phe Cys Val Asp Pro | Pro Glu Phe Gln Gly Gln |     |  |     |
|                 | 395                 |                         | 400 |  | 405 |
| Asn Val Arg Gln | Val His Phe Arg Asp | Met Met Glu Ile Cys Leu |     |  |     |
|                 | 410                 |                         | 415 |  | 420 |
| Pro Leu Ile Ala | Pro Glu Ser Phe Pro | Ser Asn Leu Asn Val Glu |     |  |     |
|                 | 425                 |                         | 430 |  | 435 |
| Ala Gly Ser Tyr | Val Ser Phe His Cys | Arg Ala Thr Ala Glu Pro |     |  |     |
|                 | 440                 |                         | 445 |  | 450 |
| Gln Pro Glu Ile | Tyr Trp Ile Thr Pro | Ser Gly Gln Lys Leu Leu |     |  |     |
|                 | 455                 |                         | 460 |  | 465 |
| Pro Asn Thr Leu | Thr Asp Lys Phe Tyr | Val His Ser Glu Gly Thr |     |  |     |
|                 | 470                 |                         | 475 |  | 480 |
| Leu Asp Ile Asn | Gly Val Thr Pro Lys | Glu Gly Gly Leu Tyr Thr |     |  |     |
|                 | 485                 |                         | 490 |  | 495 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Ile | Ala | Thr | Asn | Leu | Val | Gly | Ala | Asp | Leu | Lys | Ser | Val | Met | 500 | 505 | 510 |
| Ile | Lys | Val | Asp | Gly | Ser | Phe | Pro | Gln | Asp | Asn | Asn | Gly | Ser | Leu | 515 | 520 | 525 |
| Asn | Ile | Lys | Ile | Arg | Asp | Ile | Gln | Ala | Asn | Ser | Val | Leu | Val | Ser | 530 | 535 | 540 |
| Trp | Lys | Ala | Ser | Ser | Lys | Ile | Leu | Lys | Ser | Ser | Val | Lys | Trp | Thr | 545 | 550 | 555 |
| Ala | Phe | Val | Lys | Thr | Glu | Asn | Ser | His | Ala | Ala | Gln | Ser | Ala | Arg | 560 | 565 | 570 |
| Ile | Pro | Ser | Asp | Val | Lys | Val | Tyr | Asn | Leu | Thr | His | Leu | Asn | Pro | 575 | 580 | 585 |
| Ser | Thr | Glu | Tyr | Lys | Ile | Cys | Ile | Asp | Ile | Pro | Thr | Ile | Tyr | Gln | 590 | 595 | 600 |
| Lys | Asn | Arg | Lys | Lys | Cys | Val | Asn | Val | Thr | Thr | Lys | Gly | Leu | His | 605 | 610 | 615 |
| Pro | Asp | Gln | Lys | Glu | Tyr | Glu | Lys | Asn | Asn | Thr | Thr | Thr | Leu | Met | 620 | 625 | 630 |
| Ala | Cys | Leu | Gly | Gly | Leu | Leu | Gly | Ile | Ile | Gly | Val | Ile | Cys | Leu | 635 | 640 | 645 |
| Ile | Ser | Cys | Leu | Ser | Pro | Glu | Met | Asn | Cys | Asp | Gly | Gly | His | Ser | 650 | 655 | 660 |
| Tyr | Val | Arg | Asn | Tyr | Leu | Gln | Lys | Pro | Thr | Phe | Ala | Leu | Gly | Glu | 665 | 670 | 675 |
| Leu | Tyr | Pro | Pro | Leu | Ile | Asn | Leu | Trp | Glu | Ala | Gly | Lys | Glu | Lys | 680 | 685 | 690 |
| Ser | Thr | Ser | Leu | Lys | Val | Lys | Ala | Thr | Val | Ile | Gly | Leu | Pro | Thr | 695 | 700 | 705 |

Asn Met Ser

<210> 70  
 <211> 1305  
 <212> DNA  
 <213> Homo Sapien

<400> 70  
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 cacatgtggt agctgcagcc ttttgaaaca cgcaagaagg aatcaatag 100  
 tgtggacagg gctggaacct ttaccacgct tggtggagta gatgaggaat 150  
 gggctcgtga ttatgctgac attccagcat gaatctggta gacctgtggt 200

taaccggttc cctctccatg tgtctcctcc tacaaagttt tggtcttatg 250  
 atactgtgct ttcattctgc cagtatgtgt cccaagggct gtctttgttc 300  
 ttctcttggg gggttaaagt tcacctgtag caatgcaaat ctcaaggaaa 350  
 tacctagaga tcttctcctt gaaacagtct tactgtatct ggactccaat 400  
 cagatcacat ctattcccaa tgaaattttt aaggacctcc atcaactgag 450  
 agttctcaac ctgtccaaaa atggcattga gtttatcgat gagcatgcct 500  
 tcaaaggagt agctgaaacc ttgcagactc tggacttgtc cgacaatcgg 550  
 attcaaagtg tgcacaaaaa tgccttcaat aacctgaagg ccagggccag 600  
 aattgccaac aacctctggc actgcgactg tactctacag caagttctga 650  
 ggagcatggc gtccaatcat gagacagccc acaacgtgat ctgtaaaacg 700  
 tccgtgttgg atgaacatgc tggcagacca ttctcaatg ctgccaacga 750  
 cgctgacctt tgtaacctcc ctaaaaaaac taccgattat gccatgctgg 800  
 tcaccatggt tggttggttc actatggtga tctcatatgt ggtatattat 850  
 gtgaggcaaa atcaggagga tgcccggaga cacctcgaat acttgaaatc 900  
 cctgccaaagc aggcagaaga aagcagatga acctgatgat attagcactg 950  
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 cgattgcagt agaaataagt ggtttacttc tcccatccat tgtaaacatt 1050  
 tgaaactttg tatttcagtt ttttttgaat tatgccactg ctgaactttt 1100  
 aacaaacact acaacataaa taatttgagt ttaggtgatc cacccttaa 1150  
 ttgtaccccc gatggtatat ttctgagtaa gctactatct gaacattagt 1200  
 tagatccatc tcactattta ataatgaaat ttattttttt aatttaaaag 1250  
 caaataaaaag cttaactttg aaccatggga aaaaaaaaaa aaaaaaaaaa 1300  
 aaaca 1305

<210> 71  
 <211> 259  
 <212> PRT  
 <213> Homo Sapien

<400> 71  
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 1 5 10 15  
 Leu Leu Leu Gln Ser Phe Val Leu Met Ile Leu Cys Phe His Ser  
 20 25 30  
 Ala Ser Met Cys Pro Lys Gly Cys Leu Cys Ser Ser Ser Gly Gly  
 35 40 45

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Leu | Asn | Val | Thr | Cys | Ser | Asn | Ala | Asn | Leu | Lys | Glu | Ile | Pro | Arg |  | 50  | 55  | 60  |
| Asp | Leu | Pro | Pro | Glu | Thr | Val | Leu | Leu | Tyr | Leu | Asp | Ser | Asn | Gln |  | 65  | 70  | 75  |
| Ile | Thr | Ser | Ile | Pro | Asn | Glu | Ile | Phe | Lys | Asp | Leu | His | Gln | Leu |  | 80  | 85  | 90  |
| Arg | Val | Leu | Asn | Leu | Ser | Lys | Asn | Gly | Ile | Glu | Phe | Ile | Asp | Glu |  | 95  | 100 | 105 |
| His | Ala | Phe | Lys | Gly | Val | Ala | Glu | Thr | Leu | Gln | Thr | Leu | Asp | Leu |  | 110 | 115 | 120 |
| Ser | Asp | Asn | Arg | Ile | Gln | Ser | Val | His | Lys | Asn | Ala | Phe | Asn | Asn |  | 125 | 130 | 135 |
| Leu | Lys | Ala | Arg | Ala | Arg | Ile | Ala | Asn | Asn | Pro | Trp | His | Cys | Asp |  | 140 | 145 | 150 |
| Cys | Thr | Leu | Gln | Gln | Val | Leu | Arg | Ser | Met | Ala | Ser | Asn | His | Glu |  | 155 | 160 | 165 |
| Thr | Ala | His | Asn | Val | Ile | Cys | Lys | Thr | Ser | Val | Leu | Asp | Glu | His |  | 170 | 175 | 180 |
| Ala | Gly | Arg | Pro | Phe | Leu | Asn | Ala | Ala | Asn | Asp | Ala | Asp | Leu | Cys |  | 185 | 190 | 195 |
| Asn | Leu | Pro | Lys | Lys | Thr | Thr | Asp | Tyr | Ala | Met | Leu | Val | Thr | Met |  | 200 | 205 | 210 |
| Phe | Gly | Trp | Phe | Thr | Met | Val | Ile | Ser | Tyr | Val | Val | Tyr | Tyr | Val |  | 215 | 220 | 225 |
| Arg | Gln | Asn | Gln | Glu | Asp | Ala | Arg | Arg | His | Leu | Glu | Tyr | Leu | Lys |  | 230 | 235 | 240 |
| Ser | Leu | Pro | Ser | Arg | Gln | Lys | Lys | Ala | Asp | Glu | Pro | Asp | Asp | Ile |  | 245 | 250 | 255 |
| Ser | Thr | Val | Val |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |

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 <211> 2290  
 <212> DNA  
 <213> Homo Sapien

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 cgggctgccc gccccgctgc gactgctccg cccaggaccg cgctgtgctg 200

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 agttcgccag cttcccgcac ctggaggagc tggagctcaa cgagaacatc 350  
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 accgacacgc ggcagagtca ataattcaat aaaaaagtta cgaactttct 2200  
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 <212> PRT  
 <213> Homo Sapien

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 Leu Gly Ser Val Leu Ser Gly Ser Ala Thr Gly Cys Pro Pro Arg  
 35 40 45  
 Cys Glu Cys Ser Ala Gln Asp Arg Ala Val Leu Cys His Arg Lys  
 50 55 60  
 Cys Phe Val Ala Val Pro Glu Gly Ile Pro Thr Glu Thr Arg Leu  
 65 70 75  
 Leu Asp Leu Gly Lys Asn Arg Ile Lys Thr Leu Asn Gln Asp Glu  
 80 85 90  
 Phe Ala Ser Phe Pro His Leu Glu Glu Leu Glu Leu Asn Glu Asn  
 95 100 105  
 Ile Val Ser Ala Val Glu Pro Gly Ala Phe Asn Asn Leu Phe Asn  
 110 115 120  
 Leu Arg Thr Leu Gly Leu Arg Ser Asn Arg Leu Lys Leu Ile Pro  
 125 130 135  
 Leu Gly Val Phe Thr Gly Leu Ser Asn Leu Thr Lys Gln Asp Ile  
 140 145 150



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ser | Glu | Asn | Lys | Ile | Val | Ile | Leu | Leu | Asp | Tyr | Met | Phe | Gln | Asp |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Leu | Tyr | Asn | Leu | Lys | Ser | Leu | Glu | Val | Gly | Asp | Asn | Asp | Leu | Val |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Tyr | Ile | Ser | His | Arg | Ala | Phe | Ser | Gly | Leu | Asn | Ser | Leu | Glu | Gln |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Leu | Thr | Leu | Glu | Lys | Cys | Asn | Leu | Thr | Ser | Ile | Pro | Thr | Glu | Ala |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Leu | Ser | His | Leu | His | Gly | Leu | Ile | Val | Leu | Arg | Leu | Arg | His | Leu |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Asn | Ile | Asn | Ala | Ile | Arg | Asp | Tyr | Ser | Phe | Lys | Arg | Leu | Tyr | Arg |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Leu | Lys | Val | Leu | Glu | Ile | Ser | His | Trp | Pro | Tyr | Leu | Asp | Thr | Met |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Thr | Pro | Asn | Cys | Leu | Tyr | Gly | Leu | Asn | Leu | Thr | Ser | Leu | Ser | Ile |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Thr | His | Cys | Asn | Leu | Thr | Ala | Val | Pro | Tyr | Leu | Ala | Val | Arg | His |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Leu | Val | Tyr | Leu | Arg | Phe | Leu | Asn | Leu | Ser | Tyr | Asn | Pro | Ile | Ser |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| Thr | Ile | Glu | Gly | Ser | Met | Leu | His | Glu | Leu | Leu | Arg | Leu | Gln | Glu |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |
| Ile | Gln | Leu | Val | Gly | Gly | Gln | Leu | Ala | Val | Val | Glu | Pro | Tyr | Ala |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |
| Phe | Arg | Gly | Leu | Asn | Tyr | Leu | Arg | Val | Leu | Asn | Val | Ser | Gly | Asn |  |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |  |
| Gln | Leu | Thr | Thr | Leu | Glu | Glu | Ser | Val | Phe | His | Ser | Val | Gly | Asn |  |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |  |
| Leu | Glu | Thr | Leu | Ile | Leu | Asp | Ser | Asn | Pro | Leu | Ala | Cys | Asp | Cys |  |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |  |
| Arg | Leu | Leu | Trp | Val | Phe | Arg | Arg | Arg | Trp | Arg | Leu | Asn | Phe | Asn |  |
|     |     |     |     | 380 |     |     |     |     | 385 |     |     |     |     | 390 |  |
| Arg | Gln | Gln | Pro | Thr | Cys | Ala | Thr | Pro | Glu | Phe | Val | Gln | Gly | Lys |  |
|     |     |     |     | 395 |     |     |     |     | 400 |     |     |     |     | 405 |  |
| Glu | Phe | Lys | Asp | Phe | Pro | Asp | Val | Leu | Leu | Pro | Asn | Tyr | Phe | Thr |  |
|     |     |     |     | 410 |     |     |     |     | 415 |     |     |     |     | 420 |  |
| Cys | Arg | Arg | Ala | Arg | Ile | Arg | Asp | Arg | Lys | Ala | Gln | Gln | Val | Phe |  |
|     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |     | 435 |  |
| Val | Asp | Glu | Gly | His | Thr | Val | Gln | Phe | Val | Cys | Arg | Ala | Asp | Gly |  |
|     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     | 450 |  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Pro | Pro | Pro | Ala | Ile | Leu | Trp | Leu | Ser | Pro | Arg | Lys | His | Leu |
|     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     | 465 |
| Val | Ser | Ala | Lys | Ser | Asn | Gly | Arg | Leu | Thr | Val | Phe | Pro | Asp | Gly |
|     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Thr | Leu | Glu | Val | Arg | Tyr | Ala | Gln | Val | Gln | Asp | Asn | Gly | Thr | Tyr |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |
| Leu | Cys | Ile | Ala | Ala | Asn | Ala | Gly | Gly | Asn | Asp | Ser | Met | Pro | Ala |
|     |     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |
| His | Leu | His | Val | Arg | Ser | Tyr | Ser | Pro | Asp | Trp | Pro | His | Gln | Pro |
|     |     |     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |
| Asn | Lys | Thr | Phe | Ala | Phe | Ile | Ser | Asn | Gln | Pro | Gly | Glu | Gly | Glu |
|     |     |     |     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |
| Ala | Asn | Ser | Thr | Arg | Ala | Thr | Val | Pro | Phe | Pro | Phe | Asp | Ile | Lys |
|     |     |     |     | 545 |     |     |     |     | 550 |     |     |     |     | 555 |
| Thr | Leu | Ile | Ile | Ala | Thr | Thr | Met | Gly | Phe | Ile | Ser | Phe | Leu | Gly |
|     |     |     |     | 560 |     |     |     |     | 565 |     |     |     |     | 570 |
| Val | Val | Leu | Phe | Cys | Leu | Val | Leu | Leu | Phe | Leu | Trp | Ser | Arg | Gly |
|     |     |     |     | 575 |     |     |     |     | 580 |     |     |     |     | 585 |
| Lys | Gly | Asn | Thr | Lys | His | Asn | Ile | Glu | Ile | Glu | Tyr | Val | Pro | Arg |
|     |     |     |     | 590 |     |     |     |     | 595 |     |     |     |     | 600 |
| Lys | Ser | Asp | Ala | Gly | Ile | Ser | Ser | Ala | Asp | Ala | Pro | Arg | Lys | Phe |
|     |     |     |     | 605 |     |     |     |     | 610 |     |     |     |     | 615 |
| Asn | Met | Lys | Met | Ile |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     | 620 |     |     |     |     |     |     |     |     |     |     |

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<210> 76  
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 <210> 78  
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<212> PRT  
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<400> 84  
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Ser Gln Pro Trp Thr Ser Asp Glu Thr Val Val Ala Gly Gly Thr  
35 40 45  
Val Val Leu Lys Cys Gln Val Lys Asp His Glu Asp Ser Ser Leu  
50 55 60  
Gln Trp Ser Asn Pro Ala Gln Gln Thr Leu Tyr Phe Gly Glu Lys  
65 70 75  
Arg Ala Leu Arg Asp Asn Arg Ile Gln Leu Val Thr Ser Thr Pro  
80 85 90  
His Glu Leu Ser Ile Ser Ile Ser Asn Val Ala Leu Ala Asp Glu

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| Gly | Glu | Tyr | Thr | Cys | Ser | Ile | Phe | Thr | Met | Pro | Val | Arg | Thr | Ala |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |
| Lys | Ser | Leu | Val | Thr | Val | Leu | Gly | Ile | Pro | Gln | Lys | Pro | Ile | Ile |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |
| Thr | Gly | Tyr | Lys | Ser | Ser | Leu | Arg | Glu | Lys | Asp | Thr | Ala | Thr | Leu |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |
| Asn | Cys | Gln | Ser | Ser | Gly | Ser | Lys | Pro | Ala | Ala | Arg | Leu | Thr | Trp |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |
| Arg | Lys | Gly | Asp | Gln | Glu | Leu | His | Gly | Glu | Pro | Thr | Arg | Ile | Gln |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |
| Glu | Asp | Pro | Asn | Gly | Lys | Thr | Phe | Thr | Val | Ser | Ser | Ser | Val | Thr |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |
| Phe | Gln | Val | Thr | Arg | Glu | Asp | Asp | Gly | Ala | Ser | Ile | Val | Cys | Ser |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |
| Val | Asn | His | Glu | Ser | Leu | Lys | Gly | Ala | Asp | Arg | Ser | Thr | Ser | Gln |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |
| Arg | Ile | Glu | Val | Leu | Tyr | Thr | Pro | Thr | Ala | Met | Ile | Arg | Pro | Asp |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Pro | Pro | His | Pro | Arg | Glu | Gly | Gln | Lys | Leu | Leu | Leu | His | Cys | Glu |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |
| Gly | Arg | Gly | Asn | Pro | Val | Pro | Gln | Gln | Tyr | Leu | Trp | Glu | Lys | Glu |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |
| Gly | Ser | Val | Pro | Pro | Leu | Lys | Met | Thr | Gln | Glu | Ser | Ala | Leu | Ile |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |
| Phe | Pro | Phe | Leu | Asn | Lys | Ser | Asp | Ser | Gly | Thr | Tyr | Gly | Cys | Thr |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |
| Ala | Thr | Ser | Asn | Met | Gly | Ser | Tyr | Lys | Ala | Tyr | Tyr | Thr | Leu | Asn |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |
| Val | Asn | Asp | Pro | Ser | Pro | Val | Pro | Ser | Ser | Ser | Ser | Thr | Tyr | His |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |
| Ala | Ile | Ile | Gly | Gly | Ile | Val | Ala | Phe | Ile | Val | Phe | Leu | Leu | Leu |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |
| Ile | Met | Leu | Ile | Phe | Leu | Gly | His | Tyr | Leu | Ile | Arg | His | Lys | Gly |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |
| Thr | Tyr | Leu | Thr | His | Glu | Ala | Lys | Gly | Ser | Asp | Asp | Ala | Pro | Asp |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |
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<400> 91

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| Met | Leu | Leu | Trp | Ile | Leu | Leu | Leu | Glu | Thr | Ser | Leu | Cys | Phe | Ala |  |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |  |
| Ala | Gly | Asn | Val | Thr | Gly | Asp | Val | Cys | Lys | Glu | Lys | Ile | Cys | Ser |  |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |  |
| Cys | Asn | Glu | Ile | Glu | Gly | Asp | Leu | His | Val | Asp | Cys | Glu | Lys | Lys |  |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |  |
| Gly | Phe | Thr | Ser | Leu | Gln | Arg | Phe | Thr | Ala | Pro | Thr | Ser | Gln | Phe |  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |  |
| Tyr | His | Leu | Phe | Leu | His | Gly | Asn | Ser | Leu | Thr | Arg | Leu | Phe | Pro |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |  |
| Asn | Glu | Phe | Ala | Asn | Phe | Tyr | Asn | Ala | Val | Ser | Leu | His | Met | Glu |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Asn | Asn | Gly | Leu | His | Glu | Ile | Val | Pro | Gly | Ala | Phe | Leu | Gly | Leu |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Gln | Leu | Val | Lys | Arg | Leu | His | Ile | Asn | Asn | Asn | Lys | Ile | Lys | Ser |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Phe | Arg | Lys | Gln | Thr | Phe | Leu | Gly | Leu | Asp | Asp | Leu | Glu | Tyr | Leu |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Gln | Ala | Asp | Phe | Asn | Leu | Leu | Arg | Asp | Ile | Asp | Pro | Gly | Ala | Phe |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Gln | Asp | Leu | Asn | Lys | Leu | Glu | Val | Leu | Ile | Leu | Asn | Asp | Asn | Leu |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Ile | Ser | Thr | Leu | Pro | Ala | Asn | Val | Phe | Gln | Tyr | Val | Pro | Ile | Thr |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| His | Leu | Asp | Leu | Arg | Gly | Asn | Arg | Leu | Lys | Thr | Leu | Pro | Tyr | Glu |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Glu | Val | Leu | Glu | Gln | Ile | Pro | Gly | Ile | Ala | Glu | Ile | Leu | Leu | Glu |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Asp | Asn | Pro | Trp | Asp | Cys | Thr | Cys | Asp | Leu | Leu | Ser | Leu | Lys | Glu |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Trp | Leu | Glu | Asn | Ile | Pro | Lys | Asn | Ala | Leu | Ile | Gly | Arg | Val | Val |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Cys | Glu | Ala | Pro | Thr | Arg | Leu | Gln | Gly | Lys | Asp | Leu | Asn | Glu | Thr |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Thr | Glu | Gln | Asp | Leu | Cys | Pro | Leu | Lys | Asn | Arg | Val | Asp | Ser | Ser |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |

63

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Ser | Asn | Asp | Glu | Ile | Cys | Pro | Gln | Leu | Tyr | Ala | Arg | Ile |
|     |     |     |     | 575 |     |     |     |     | 580 |     |     |     |     | 585 |
| Ser | Pro | Thr | Leu | Thr | Ser | His | Ser | Lys | Asn | Ser | Thr | Gly | Leu | Ala |
|     |     |     |     | 590 |     |     |     |     | 595 |     |     |     |     | 600 |
| Glu | Thr | Gly | Thr | His | Ser | Asn | Ser | Tyr | Leu | Asp | Thr | Ser | Arg | Val |
|     |     |     |     | 605 |     |     |     |     | 610 |     |     |     |     | 615 |
| Ser | Ile | Ser | Val | Leu | Val | Pro | Gly | Leu | Leu | Leu | Val | Phe | Val | Thr |
|     |     |     |     | 620 |     |     |     |     | 625 |     |     |     |     | 630 |
| Ser | Ala | Phe | Thr | Val | Val | Gly | Met | Leu | Val | Phe | Ile | Leu | Arg | Asn |
|     |     |     |     | 635 |     |     |     |     | 640 |     |     |     |     | 645 |
| Arg | Lys | Arg | Ser | Lys | Arg | Arg | Asp | Ala | Asn | Ser | Ser | Ala | Ser | Glu |
|     |     |     |     | 650 |     |     |     |     | 655 |     |     |     |     | 660 |
| Ile | Asn | Ser | Leu | Gln | Thr | Val | Cys | Asp | Ser | Ser | Tyr | Trp | His | Asn |
|     |     |     |     | 665 |     |     |     |     | 670 |     |     |     |     | 675 |
| Gly | Pro | Tyr | Asn | Ala | Asp | Gly | Ala | His | Arg | Val | Tyr | Asp | Cys | Gly |
|     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |     | 690 |
| Ser | His | Ser | Leu | Ser | Asp |     |     |     |     |     |     |     |     |     |
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 35 40 45  
 Lys Arg Gln Ala Ala Glu Glu Ala Cys Ile Leu Arg Gly Gly Ala  
 50 55 60  
 Leu Ser Thr Val Arg Ala Gly Ala Glu Leu Arg Ala Val Leu Ala  
 65 70 75

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Leu | Leu | Arg | Ala | Gly | Pro | Gly | Pro | Gly | Gly | Gly | Ser | Lys | Asp | Leu |  | 80  | 85  | 90  |
| Leu | Phe | Trp | Val | Ala | Leu | Glu | Arg | Arg | Arg | Ser | His | Cys | Thr | Leu |  | 95  | 100 | 105 |
| Glu | Asn | Glu | Pro | Leu | Arg | Gly | Phe | Ser | Trp | Leu | Ser | Ser | Asp | Pro |  | 110 | 115 | 120 |
| Gly | Gly | Leu | Glu | Ser | Asp | Thr | Leu | Gln | Trp | Val | Glu | Glu | Pro | Gln |  | 125 | 130 | 135 |
| Arg | Ser | Cys | Thr | Ala | Arg | Arg | Cys | Ala | Val | Leu | Gln | Ala | Thr | Gly |  | 140 | 145 | 150 |
| Gly | Val | Glu | Pro | Ala | Gly | Trp | Lys | Glu | Met | Arg | Cys | His | Leu | Arg |  | 155 | 160 | 165 |
| Ala | Asn | Gly | Tyr | Leu | Cys | Lys | Tyr | Gln | Phe | Glu | Val | Leu | Cys | Pro |  | 170 | 175 | 180 |
| Ala | Pro | Arg | Pro | Gly | Ala | Ala | Ser | Asn | Leu | Ser | Tyr | Arg | Ala | Pro |  | 185 | 190 | 195 |
| Phe | Gln | Leu | His | Ser | Ala | Ala | Leu | Asp | Phe | Ser | Pro | Pro | Gly | Thr |  | 200 | 205 | 210 |
| Glu | Val | Ser | Ala | Leu | Cys | Arg | Gly | Gln | Leu | Pro | Ile | Ser | Val | Thr |  | 215 | 220 | 225 |
| Cys | Ile | Ala | Asp | Glu | Ile | Gly | Ala | Arg | Trp | Asp | Lys | Leu | Ser | Gly |  | 230 | 235 | 240 |
| Asp | Val | Leu | Cys | Pro | Cys | Pro | Gly | Arg | Tyr | Leu | Arg | Ala | Gly | Lys |  | 245 | 250 | 255 |
| Cys | Ala | Glu | Leu | Pro | Asn | Cys | Leu | Asp | Asp | Leu | Gly | Gly | Phe | Ala |  | 260 | 265 | 270 |
| Cys | Glu | Cys | Ala | Thr | Gly | Phe | Glu | Leu | Gly | Lys | Asp | Gly | Arg | Ser |  | 275 | 280 | 285 |
| Cys | Val | Thr | Ser | Gly | Glu | Gly | Gln | Pro | Thr | Leu | Gly | Gly | Thr | Gly |  | 290 | 295 | 300 |
| Val | Pro | Thr | Arg | Arg | Pro | Pro | Ala | Thr | Ala | Thr | Ser | Pro | Val | Pro |  | 305 | 310 | 315 |
| Gln | Arg | Thr | Trp | Pro | Ile | Arg | Val | Asp | Glu | Lys | Leu | Gly | Glu | Thr |  | 320 | 325 | 330 |
| Pro | Leu | Val | Pro | Glu | Gln | Asp | Asn | Ser | Val | Thr | Ser | Ile | Pro | Glu |  | 335 | 340 | 345 |
| Ile | Pro | Arg | Trp | Gly | Ser | Gln | Ser | Thr | Met | Ser | Thr | Leu | Gln | Met |  | 350 | 355 | 360 |
| Ser | Leu | Gln | Ala | Glu | Ser | Lys | Ala | Thr | Ile | Thr | Pro | Ser | Gly | Ser |  | 365 | 370 | 375 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Ile | Ser | Lys | Phe | Asn | Ser | Thr | Thr | Ser | Ser | Ala | Thr | Pro | Gln |
|     |     |     |     | 380 |     |     |     |     | 385 |     |     |     |     | 390 |
| Ala | Phe | Asp | Ser | Ser | Ser | Ala | Val | Val | Phe | Ile | Phe | Val | Ser | Thr |
|     |     |     |     | 395 |     |     |     |     | 400 |     |     |     |     | 405 |
| Ala | Val | Val | Val | Leu | Val | Ile | Leu | Thr | Met | Thr | Val | Leu | Gly | Leu |
|     |     |     |     | 410 |     |     |     |     | 415 |     |     |     |     | 420 |
| Val | Lys | Leu | Cys | Phe | His | Glu | Ser | Pro | Ser | Ser | Gln | Pro | Arg | Lys |
|     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |     | 435 |
| Glu | Ser | Met | Gly | Pro | Pro | Gly | Leu | Glu | Ser | Asp | Pro | Glu | Pro | Ala |
|     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     | 450 |
| Ala | Leu | Gly | Ser | Ser | Ser | Ala | His | Cys | Thr | Asn | Asn | Gly | Val | Lys |
|     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     | 465 |
| Val | Gly | Asp | Cys | Asp | Leu | Arg | Asp | Arg | Ala | Glu | Gly | Ala | Leu | Leu |
|     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Ala | Glu | Ser | Pro | Leu | Gly | Ser | Ser | Asp | Ala |     |     |     |     |     |
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<220>  
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<220>  
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<400> 98  
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<210> 100  
 <211> 24



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 <210> 102  
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 <400> 102  
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 <210> 103  
 <211> 2026  
 <212> DNA  
 <213> Homo Sapien  
  
 <400> 103  
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   cctccgccct gccggccgcg tatcccccg ctacctgggc cgccccgcgg 150  
  
   cggtgcgcg gtgagagggg gcgcgcgggc agccgagcgc cgggtgtgagc 200  
  
   cagcgctgct gccagtgtga gcggcggtgt gagcgcggtg ggtgcggagg 250  
  
   ggcgtgtgtg ccggcgcgcg cgccgtgggg tgcaaaccce gagcgtctac 300  
  
   gctgccatga ggggcgcgaa cgcttgggcg ccactctgcc tgctgctggc 350  
  
   tgccgccacc cagctctcgc ggcagcagtc cccagagaga cctgttttca 400  
  
   catgtggtgg cattcttact ggagagtctg gatttattgg cagtgaaggt 450  
  
   tttctgggag tgtaccctcc aaatagcaaa tgtacttgga aaatcacagt 500  
  
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   gtgacaacct gtgccgctat gactttgtgg atgtgtacaa tggccatgcc 600

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aatattttta aaggaaaaaa aaaaaa 2026

<210> 104

<211> 415  
 <212> PRT  
 <213> Homo Sapien

<400> 104

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Arg | Gly | Ala | Asn | Ala | Trp | Ala | Pro | Leu | Cys | Leu | Leu | Leu | Ala | 1   | 5   | 10  | 15 |
| Ala | Ala | Thr | Gln | Leu | Ser | Arg | Gln | Gln | Ser | Pro | Glu | Arg | Pro | Val | 20  | 25  | 30  |    |
| Phe | Thr | Cys | Gly | Gly | Ile | Leu | Thr | Gly | Glu | Ser | Gly | Phe | Ile | Gly | 35  | 40  | 45  |    |
| Ser | Glu | Gly | Phe | Pro | Gly | Val | Tyr | Pro | Pro | Asn | Ser | Lys | Cys | Thr | 50  | 55  | 60  |    |
| Trp | Lys | Ile | Thr | Val | Pro | Glu | Gly | Lys | Val | Val | Val | Leu | Asn | Phe | 65  | 70  | 75  |    |
| Arg | Phe | Ile | Asp | Leu | Glu | Ser | Asp | Asn | Leu | Cys | Arg | Tyr | Asp | Phe | 80  | 85  | 90  |    |
| Val | Asp | Val | Tyr | Asn | Gly | His | Ala | Asn | Gly | Gln | Arg | Ile | Gly | Arg | 95  | 100 | 105 |    |
| Phe | Cys | Gly | Thr | Phe | Arg | Pro | Gly | Ala | Leu | Val | Ser | Ser | Gly | Asn | 110 | 115 | 120 |    |
| Lys | Met | Met | Val | Gln | Met | Ile | Ser | Asp | Ala | Asn | Thr | Ala | Gly | Asn | 125 | 130 | 135 |    |
| Gly | Phe | Met | Ala | Met | Phe | Ser | Ala | Ala | Glu | Pro | Asn | Glu | Arg | Gly | 140 | 145 | 150 |    |
| Asp | Gln | Tyr | Cys | Gly | Gly | Leu | Leu | Asp | Arg | Pro | Ser | Gly | Ser | Phe | 155 | 160 | 165 |    |
| Lys | Thr | Pro | Asn | Trp | Pro | Asp | Arg | Asp | Tyr | Pro | Ala | Gly | Val | Thr | 170 | 175 | 180 |    |
| Cys | Val | Trp | His | Ile | Val | Ala | Pro | Lys | Asn | Gln | Leu | Ile | Glu | Leu | 185 | 190 | 195 |    |
| Lys | Phe | Glu | Lys | Phe | Asp | Val | Glu | Arg | Asp | Asn | Tyr | Cys | Arg | Tyr | 200 | 205 | 210 |    |
| Asp | Tyr | Val | Ala | Val | Phe | Asn | Gly | Gly | Glu | Val | Asn | Asp | Ala | Arg | 215 | 220 | 225 |    |
| Arg | Ile | Gly | Lys | Tyr | Cys | Gly | Asp | Ser | Pro | Pro | Ala | Pro | Ile | Val | 230 | 235 | 240 |    |
| Ser | Glu | Arg | Asn | Glu | Leu | Leu | Ile | Gln | Phe | Leu | Ser | Asp | Leu | Ser | 245 | 250 | 255 |    |
| Leu | Thr | Ala | Asp | Gly | Phe | Ile | Gly | His | Tyr | Ile | Phe | Arg | Pro | Lys | 260 | 265 | 270 |    |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Leu | Pro | Thr | Thr | Thr | Glu | Gln | Pro | Val | Thr | Thr | Thr | Phe | Pro | 275 | 280 | 285 |
| Val | Thr | Thr | Gly | Leu | Lys | Pro | Thr | Val | Ala | Leu | Cys | Gln | Gln | Lys | 290 | 295 | 300 |
| Cys | Arg | Arg | Thr | Gly | Thr | Leu | Glu | Gly | Asn | Tyr | Cys | Ser | Ser | Asp | 305 | 310 | 315 |
| Phe | Val | Leu | Ala | Gly | Thr | Val | Ile | Thr | Thr | Ile | Thr | Arg | Asp | Gly | 320 | 325 | 330 |
| Ser | Leu | His | Ala | Thr | Val | Ser | Ile | Ile | Asn | Ile | Tyr | Lys | Glu | Gly | 335 | 340 | 345 |
| Asn | Leu | Ala | Ile | Gln | Gln | Ala | Gly | Lys | Asn | Met | Ser | Ala | Arg | Leu | 350 | 355 | 360 |
| Thr | Val | Val | Cys | Lys | Gln | Cys | Pro | Leu | Leu | Arg | Arg | Gly | Leu | Asn | 365 | 370 | 375 |
| Tyr | Ile | Ile | Met | Gly | Gln | Val | Gly | Glu | Asp | Gly | Arg | Gly | Lys | Ile | 380 | 385 | 390 |
| Met | Pro | Asn | Ser | Phe | Ile | Met | Met | Phe | Lys | Thr | Lys | Asn | Gln | Lys | 395 | 400 | 405 |
| Leu | Leu | Asp | Ala | Leu | Lys | Asn | Lys | Gln | Cys |     |     |     |     |     | 410 | 415 |     |

<210> 105

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 105

ccgattcata gacctcgaga gt 22

<210> 106

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 106

gtcaaggagt cctccacaat ac 22

<210> 107

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 107  
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<210> 108  
<211> 1838  
<212> DNA  
<213> Homo Sapien

<400> 108  
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agatggcccc atggcccccg aagggcctag tcccagctgt gctctggggc 150  
ctcagcctct tcctcaacct cccaggacct atctggctcc agccctctcc 200  
acctccccag tcttctcccc cgcctcagcc ccatccgtgt catacctgcc 250  
ggggactggt tgacagcttt aacaagggcc tggagagaac catccgggac 300  
aactttggag gtggaaacac tgcctgggag gaagagaatt tgtccaaata 350  
caaagacagt gagacccgcc tggtagaggt gctggagggt gtgtgcagca 400  
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gagagctggt ggtttcacia gcagcaggag gccccggacc tcttccagtg 500  
gctgtgctca gattccctga agctctgctg ccccgaggc accttcgggc 550  
cctcctgcct tccctgtcct gggggaacag agaggccctg cgggtggctac 600  
gggcagtgtg aaggagaagg gacacgaggg ggcagcgggc actgtgactg 650  
ccaagccggc tacggggggtg aggcctgtgg ccagtgtggc cttggctact 700  
ttgaggcaga acgcaacgcc agccatctgg tatgttcggc ttgttttggc 750  
ccctgtgccc gatgctcagg acctgaggaa tcaaactgtt tgcaatgcaa 800  
gaagggtgtg gccctgcac acctcaagtg tgtagacatt gatgagtgtg 850  
gcacagaggg agccaactgt ggagctgacc aattctgcgt gaacactgag 900  
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gctccaagtg tctcgatgtg gatgagtgtg agacagaggt gtgtccggga 1050  
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cgagggttac aagcagatgg aaggcatctg tgtgaaggag cagatcccag 1150  
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cagcagatgt tctttggcat catcatctgt gcactggcca cgctggctgc 1250

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 cgctgcccc agagcttggg ctgcctctct gctggacact caggacagct 1450  
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 gccaggtac ccaggcccgg gcagacaagg ccctgggggt aaaaagtagc 1550  
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 cacaatgtgt gaatttcaaa agtttttctt taatggtggc tgctagagct 1650  
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 gctccctctt gccagctgca tgctgccagt tctgttctg tgttcaccac 1750  
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<210> 109  
 <211> 420  
 <212> PRT  
 <213> Homo Sapien

<400> 109  
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 Gly Leu Ser Leu Phe Leu Asn Leu Pro Gly Pro Ile Trp Leu Gln  
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 Pro Ser Pro Pro Pro Gln Ser Ser Pro Pro Pro Gln Pro His Pro  
 35 40 45  
 Cys His Thr Cys Arg Gly Leu Val Asp Ser Phe Asn Lys Gly Leu  
 50 55 60  
 Glu Arg Thr Ile Arg Asp Asn Phe Gly Gly Gly Asn Thr Ala Trp  
 65 70 75  
 Glu Glu Glu Asn Leu Ser Lys Tyr Lys Asp Ser Glu Thr Arg Leu  
 80 85 90  
 Val Glu Val Leu Glu Gly Val Cys Ser Lys Ser Asp Phe Glu Cys  
 95 100 105  
 His Arg Leu Leu Glu Leu Ser Glu Glu Leu Val Glu Ser Trp Trp  
 110 115 120  
 Phe His Lys Gln Gln Glu Ala Pro Asp Leu Phe Gln Trp Leu Cys  
 125 130 135  
 Ser Asp Ser Leu Lys Leu Cys Cys Pro Ala Gly Thr Phe Gly Pro

|                     |     |                         |     |                         |     |
|---------------------|-----|-------------------------|-----|-------------------------|-----|
| Ser Cys Leu Pro     | 140 |                         | 145 |                         | 150 |
| Cys Pro Gly Gly Thr | 155 | Glu Arg Pro Cys Gly Gly | 160 |                         | 165 |
| Tyr Gly Gln Cys     | 170 | Glu Gly Glu Gly Thr     | 175 | Arg Gly Gly Ser Gly His | 180 |
| Cys Asp Cys Gln     | 185 | Ala Gly Tyr Gly Gly     | 190 | Glu Ala Cys Gly Gln Cys | 195 |
| Gly Leu Gly Tyr     | 200 | Phe Glu Ala Glu Arg     | 205 | Asn Ala Ser His Leu Val | 210 |
| Cys Ser Ala Cys     | 215 | Phe Gly Pro Cys Ala     | 220 | Arg Cys Ser Gly Pro Glu | 225 |
| Glu Ser Asn Cys     | 230 | Leu Gln Cys Lys Lys     | 235 | Gly Trp Ala Leu His His | 240 |
| Leu Lys Cys Val     | 245 | Asp Ile Asp Glu Cys     | 250 | Gly Thr Glu Gly Ala Asn | 255 |
| Cys Gly Ala Asp     | 260 | Gln Phe Cys Val Asn     | 265 | Thr Glu Gly Ser Tyr Glu | 270 |
| Cys Arg Asp Cys     | 275 | Ala Lys Ala Cys Leu     | 280 | Gly Cys Met Gly Ala Gly | 285 |
| Pro Gly Arg Cys     | 290 | Lys Lys Cys Ser Pro     | 295 | Gly Tyr Gln Gln Val Gly | 300 |
| Ser Lys Cys Leu     | 305 | Asp Val Asp Glu Cys     | 310 | Glu Thr Glu Val Cys Pro | 315 |
| Gly Glu Asn Lys     | 320 | Gln Cys Glu Asn Thr     | 325 | Glu Gly Gly Tyr Arg Cys | 330 |
| Ile Cys Ala Glu     | 335 | Gly Tyr Lys Gln Met     | 340 | Glu Gly Ile Cys Val Lys | 345 |
| Glu Gln Ile Pro     | 350 | Glu Ser Ala Gly Phe     | 355 | Phe Ser Glu Met Thr Glu | 360 |
| Asp Glu Leu Val     | 365 | Val Leu Gln Gln Met     | 370 | Phe Phe Gly Ile Ile Ile | 375 |
| Cys Ala Leu Ala     | 380 | Thr Leu Ala Ala Lys     | 385 | Gly Asp Leu Val Phe Thr | 390 |
| Ala Ile Phe Ile     | 395 | Gly Ala Val Ala Ala     | 400 | Met Thr Gly Tyr Trp Leu | 405 |
| Ser Glu Arg Ser     | 410 | Asp Arg Val Leu Glu     | 415 | Gly Phe Ile Lys Gly Arg | 420 |

<210> 110

<211> 50

<212> DNA

<213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe  
  
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 <210> 111  
 <211> 22  
 <212> DNA  
 <213> Artificial Sequence  
  
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 <223> Synthetic Oligonucleotide Probe  
  
 <400> 111  
 attctgcgtg aacactgagg gc 22  
  
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 <223> Synthetic Oligonucleotide Probe  
  
 <400> 112  
 atctgcttgt agccctcggc ac 22  
  
 <210> 113  
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 <212> DNA  
 <213> Homo Sapien  
  
 <220>  
 <221> unsure  
 <222> 1461  
 <223> unknown base  
  
 <400> 113  
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 gtgttgcccc tggccagccc cggggccgcc ctgaccgggg agcagctcct 150  
 gggcagcctg ctgcggcagc tgcagctcaa agaggtgccc accctggaca 200  
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 gagctggtgc aggccgtgct gcggctcttc caggagccgg tccccaaggc 450  
 cgcgctgcac aggcacgggc ggctgtcccc gcgcagcgcc cgggcccggg 500



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 cgacgtgacc gaggccgtga acttctggca gcagctgagc cggccccggc 650  
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 ctttggccac tggagagccc ttgctcagtt ttctctattc ttattattca 1400  
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<210> 114

<211> 366

<212> PRT

<213> Homo Sapien

<400> 114

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gln | Pro | Leu | Trp | Leu | Cys | Trp | Ala | Leu | Trp | Val | Leu | Pro | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ser | Pro | Gly | Ala | Ala | Leu | Thr | Gly | Glu | Gln | Leu | Leu | Gly | Ser |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Leu | Leu | Arg | Gln | Leu | Gln | Leu | Lys | Glu | Val | Pro | Thr | Leu | Asp | Arg |  | 35  | 40  | 45  |
| Ala | Asp | Met | Glu | Glu | Leu | Val | Ile | Pro | Thr | His | Val | Arg | Ala | Gln |  | 50  | 55  | 60  |
| Tyr | Val | Ala | Leu | Leu | Gln | Arg | Ser | His | Gly | Asp | Arg | Ser | Arg | Gly |  | 65  | 70  | 75  |
| Lys | Arg | Phe | Ser | Gln | Ser | Phe | Arg | Glu | Val | Ala | Gly | Arg | Phe | Leu |  | 80  | 85  | 90  |
| Ala | Leu | Glu | Ala | Ser | Thr | His | Leu | Leu | Val | Phe | Gly | Met | Glu | Gln |  | 95  | 100 | 105 |
| Arg | Leu | Pro | Pro | Asn | Ser | Glu | Leu | Val | Gln | Ala | Val | Leu | Arg | Leu |  | 110 | 115 | 120 |
| Phe | Gln | Glu | Pro | Val | Pro | Lys | Ala | Ala | Leu | His | Arg | His | Gly | Arg |  | 125 | 130 | 135 |
| Leu | Ser | Pro | Arg | Ser | Ala | Arg | Ala | Arg | Val | Thr | Val | Glu | Trp | Leu |  | 140 | 145 | 150 |
| Arg | Val | Arg | Asp | Asp | Gly | Ser | Asn | Arg | Thr | Ser | Leu | Ile | Asp | Ser |  | 155 | 160 | 165 |
| Arg | Leu | Val | Ser | Val | His | Glu | Ser | Gly | Trp | Lys | Ala | Phe | Asp | Val |  | 170 | 175 | 180 |
| Thr | Glu | Ala | Val | Asn | Phe | Trp | Gln | Gln | Leu | Ser | Arg | Pro | Arg | Gln |  | 185 | 190 | 195 |
| Pro | Leu | Leu | Leu | Gln | Val | Ser | Val | Gln | Arg | Glu | His | Leu | Gly | Pro |  | 200 | 205 | 210 |
| Leu | Ala | Ser | Gly | Ala | His | Lys | Leu | Val | Arg | Phe | Ala | Ser | Gln | Gly |  | 215 | 220 | 225 |
| Ala | Pro | Ala | Gly | Leu | Gly | Glu | Pro | Gln | Leu | Glu | Leu | His | Thr | Leu |  | 230 | 235 | 240 |
| Asp | Leu | Gly | Asp | Tyr | Gly | Ala | Gln | Gly | Asp | Cys | Asp | Pro | Glu | Ala |  | 245 | 250 | 255 |
| Pro | Met | Thr | Glu | Gly | Thr | Arg | Cys | Cys | Arg | Gln | Glu | Met | Tyr | Ile |  | 260 | 265 | 270 |
| Asp | Leu | Gln | Gly | Met | Lys | Trp | Ala | Glu | Asn | Trp | Val | Leu | Glu | Pro |  | 275 | 280 | 285 |
| Pro | Gly | Phe | Leu | Ala | Tyr | Glu | Cys | Val | Gly | Thr | Cys | Arg | Gln | Pro |  | 290 | 295 | 300 |
| Pro | Glu | Ala | Leu | Ala | Phe | Lys | Trp | Pro | Phe | Leu | Gly | Pro | Arg | Gln |  | 305 | 310 | 315 |
| Cys | Ile | Ala | Ser | Glu | Thr | Asp | Ser | Leu | Pro | Met | Ile | Val | Ser | Ile |  | 320 | 325 | 330 |

Lys Glu Gly Gly Arg Thr Arg Pro Gln Val Val Ser Leu Pro Asn  
 335 340 345

Met Arg Val Gln Lys Cys Ser Cys Ala Ser Asp Gly Ala Leu Val  
 350 355 360

Pro Arg Arg Leu Gln Pro  
 365

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<211> 21

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<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 115

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<210> 116

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 116

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<210> 117

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 117

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<210> 118

<211> 1857

<212> DNA

<213> Homo Sapien

<400> 118

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tggcgatcct gttgtgctcc ctggcattgg gcagtgttac agtgcactct 150

tctgaacctg aagtcagaat tcctgagaat aatcctgtga agttgtcctg 200

tgctactcgc ggcttttctt ctccccgtgt ggagtgggaag tttgaccaag 250

gagacaccac cagactcggt tgctataata acaagatcac agcttcctat 300

gaggaccggg tgaccttctt gccaaactggt atcaccttca agtccgtgac 350  
acgggaagac actgggacat acacttgat ggtctctgag gaaggcggca 400  
acagctatgg ggaggtcaag gtcaagctca tcgtgcttgt gcctccatcc 450  
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gctgacatgc tcagaacaag atgggtcccc accttctgaa tacacctggt 550  
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gctgggcgca gtggctcacg cctgtaatcc cagaggctga ggcaggcgga 1700  
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tactggaaat acaaagtttag ccaggcatgg tgggtgcatgc ctgtagtccc 1800  
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 aaaaaaaa 1857

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 <212> PRT  
 <213> Homo Sapien

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     1                    5                    10                    15  
 Ile Leu Ala Ile Leu Leu Cys Ser Leu Ala Leu Gly Ser Val Thr  
                     20                    25                    30  
 Val His Ser Ser Glu Pro Glu Val Arg Ile Pro Glu Asn Asn Pro  
                     35                    40                    45  
 Val Lys Leu Ser Cys Ala Tyr Ser Gly Phe Ser Ser Pro Arg Val  
                     50                    55                    60  
 Glu Trp Lys Phe Asp Gln Gly Asp Thr Thr Arg Leu Val Cys Tyr  
                     65                    70                    75  
 Asn Asn Lys Ile Thr Ala Ser Tyr Glu Asp Arg Val Thr Phe Leu  
                     80                    85                    90  
 Pro Thr Gly Ile Thr Phe Lys Ser Val Thr Arg Glu Asp Thr Gly  
                     95                    100                    105  
 Thr Tyr Thr Cys Met Val Ser Glu Glu Gly Gly Asn Ser Tyr Gly  
                     110                    115                    120  
 Glu Val Lys Val Lys Leu Ile Val Leu Val Pro Pro Ser Lys Pro  
                     125                    130                    135  
 Thr Val Asn Ile Pro Ser Ser Ala Thr Ile Gly Asn Arg Ala Val  
                     140                    145                    150  
 Leu Thr Cys Ser Glu Gln Asp Gly Ser Pro Pro Ser Glu Tyr Thr  
                     155                    160                    165  
 Trp Phe Lys Asp Gly Ile Val Met Pro Thr Asn Pro Lys Ser Thr  
                     170                    175                    180  
 Arg Ala Phe Ser Asn Ser Ser Tyr Val Leu Asn Pro Thr Thr Gly  
                     185                    190                    195  
 Glu Leu Val Phe Asp Pro Leu Ser Ala Ser Asp Thr Gly Glu Tyr  
                     200                    205                    210  
 Ser Cys Glu Ala Arg Asn Gly Tyr Gly Thr Pro Met Thr Ser Asn  
                     215                    220                    225  
 Ala Val Arg Met Glu Ala Val Glu Arg Asn Val Gly Val Ile Val  
                     230                    235                    240

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | Val | Leu | Val | Thr | Leu | Ile | Leu | Leu | Gly | Ile | Leu | Val | Phe |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Gly | Ile | Trp | Phe | Ala | Tyr | Ser | Arg | Gly | His | Phe | Asp | Arg | Thr | Lys |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Lys | Gly | Thr | Ser | Ser | Lys | Lys | Val | Ile | Tyr | Ser | Gln | Pro | Ser | Ala |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Arg | Ser | Glu | Gly | Glu | Phe | Lys | Gln | Thr | Ser | Ser | Phe | Leu | Val |     |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     |     |

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 <211> 24  
 <212> DNA  
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<220>  
 <223> Synthetic Oligonucleotide Probe

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<210> 121  
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<220>  
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<210> 122  
 <211> 20  
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<220>  
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<400> 122  
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<210> 123  
 <211> 24  
 <212> DNA  
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<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 123  
 taggaagagt tgctgaaggc acgg 24

<210> 124  
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<212> DNA  
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 <400> 124  
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 <210> 125  
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 <212> DNA  
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   gcgcaggttg gagcgtggcg aacaggggct ctgggcctgg cgctgctgct 100  
   gctgctcggc ctcggaactag gcctggaggc cgccgcgagc ccgctttcca 150  
   ccccgacctc tgcccaggcc gcaggcccca gctcaggctc gtgcccaccc 200  
   accaagttcc agtgccgcac cagtggctta tgcgtgcccc tcacctggcg 250  
   ctgcgacagg gacttggact gcagcgatgg cagcgatgag gaggagtgca 300  
   ggattgagcc atgtaccag aaagggcaat gccaccgcc ccctggcctc 350  
   ccctgcccct gcaccggcgt cagtgactgc tctgggggaa ctgacaagaa 400  
   actgcgcaac tgcagccgcc tggcctgcct agcaggcgag ctccgttgca 450  
   cgctgagcga tgactgcatt ccactcacgt ggcgctgcga cggccaccca 500  
   gactgtcccg actccagcga cgagctcggc tgtggaacca atgagatcct 550  
   cccgaaggg gatgccacaa ccatggggcc ccctgtgacc ctggagagtg 600  
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 cacagccaga actgagggggc tggccccagg cagctcccag ggggtagaac 1150  
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<210> 127

<211> 282

<212> PRT

<213> Homo Sapien

<400> 127

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ser | Gly | Gly | Trp | Met | Ala | Gln | Val | Gly | Ala | Trp | Arg | Thr | Gly | 1   | 5   | 10  | 15 |
| Ala | Leu | Gly | Leu | Ala | Leu | Leu | Leu | Leu | Leu | Gly | Leu | Gly | Leu | Gly | 20  | 25  | 30  |    |
| Leu | Glu | Ala | Ala | Ala | Ser | Pro | Leu | Ser | Thr | Pro | Thr | Ser | Ala | Gln | 35  | 40  | 45  |    |
| Ala | Ala | Gly | Pro | Ser | Ser | Gly | Ser | Cys | Pro | Pro | Thr | Lys | Phe | Gln | 50  | 55  | 60  |    |
| Cys | Arg | Thr | Ser | Gly | Leu | Cys | Val | Pro | Leu | Thr | Trp | Arg | Cys | Asp | 65  | 70  | 75  |    |
| Arg | Asp | Leu | Asp | Cys | Ser | Asp | Gly | Ser | Asp | Glu | Glu | Glu | Cys | Arg | 80  | 85  | 90  |    |
| Ile | Glu | Pro | Cys | Thr | Gln | Lys | Gly | Gln | Cys | Pro | Pro | Pro | Pro | Gly | 95  | 100 | 105 |    |
| Leu | Pro | Cys | Pro | Cys | Thr | Gly | Val | Ser | Asp | Cys | Ser | Gly | Gly | Thr | 110 | 115 | 120 |    |
| Asp | Lys | Lys | Leu | Arg | Asn | Cys | Ser | Arg | Leu | Ala | Cys | Leu | Ala | Gly | 125 | 130 | 135 |    |
| Glu | Leu | Arg | Cys | Thr | Leu | Ser | Asp | Asp | Cys | Ile | Pro | Leu | Thr | Trp | 140 | 145 | 150 |    |
| Arg | Cys | Asp | Gly | His | Pro | Asp | Cys | Pro | Asp | Ser | Ser | Asp | Glu | Leu | 155 | 160 | 165 |    |
| Gly | Cys | Gly | Thr | Asn | Glu | Ile | Leu | Pro | Glu | Gly | Asp | Ala | Thr | Thr | 170 | 175 | 180 |    |
| Met | Gly | Pro | Pro | Val | Thr | Leu | Glu | Ser | Val | Thr | Ser | Leu | Arg | Asn |     |     |     |    |



|                                     | 185                     | 190 | 195 |
|-------------------------------------|-------------------------|-----|-----|
| Ala Thr Thr Met Gly Pro Pro Val Thr | Leu Glu Ser Val Pro Ser |     |     |
| 200                                 | 205                     | 210 |     |
| Val Gly Asn Ala Thr Ser Ser Ser Ala | Gly Asp Gln Ser Gly Ser |     |     |
| 215                                 | 220                     | 225 |     |
| Pro Thr Ala Tyr Gly Val Ile Ala Ala | Ala Ala Val Leu Ser Ala |     |     |
| 230                                 | 235                     | 240 |     |
| Ser Leu Val Thr Ala Thr Leu Leu Leu | Leu Ser Trp Leu Arg Ala |     |     |
| 245                                 | 250                     | 255 |     |
| Gln Glu Arg Leu Arg Pro Leu Gly Leu | Leu Val Ala Met Lys Glu |     |     |
| 260                                 | 265                     | 270 |     |
| Ser Leu Leu Leu Ser Glu Gln Lys Thr | Ser Leu Pro             |     |     |
| 275                                 | 280                     |     |     |

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 <212> DNA  
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<210> 129  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 129  
 ttgggtccac agccgagctc gtcg 24

<210> 130  
 <211> 50  
 <212> DNA  
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<400> 130  
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<210> 131  
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 <212> DNA  
 <213> Homo Sapien

<220>  
 <221> unsure

<222> 1837

<223> unknown base

<400> 131

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gatgaaagat gtatcatgga atgaaccgga gcaatggaga tggatttcta 200
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gattcataac aagacatata gacatggaga gaagctaata atcacttgct 600
atgaaggatt caagatccgg taccgcgacc tacacaatat ggtttcatta 650
tgtcgcgatg atggaacgtg gaataatctg cccatctgtc aaggctgcct 700
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cctttccttc tcttggtttt agacaaatgt aaacaaagct ctgacctta 1750  
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<210> 132

<211> 490

<212> PRT

<213> Homo Sapien

<400> 132

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Tyr | His | Gly | Met | Asn | Pro | Ser | Asn | Gly | Asp | Gly | Phe | Leu | Glu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Gln | Gln | Gln | Gln | Gln | Gln | Gln | Pro | Gln | Ser | Pro | Gln | Arg | Leu | Leu |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |
| Ala | Val | Ile | Leu | Trp | Phe | Gln | Leu | Ala | Leu | Cys | Phe | Gly | Pro | Ala |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |
| Gln | Leu | Thr | Gly | Gly | Phe | Asp | Asp | Leu | Gln | Val | Cys | Ala | Asp | Pro |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |
| Gly | Ile | Pro | Glu | Asn | Gly | Phe | Arg | Thr | Pro | Ser | Gly | Gly | Val | Phe |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |
| Phe | Glu | Gly | Ser | Val | Ala | Arg | Phe | His | Cys | Gln | Asp | Gly | Phe | Lys |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |
| Leu | Lys | Gly | Ala | Thr | Lys | Arg | Leu | Cys | Leu | Lys | His | Phe | Asn | Gly |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| Thr | Leu | Gly | Trp | Ile | Pro | Ser | Asp | Asn | Ser | Ile | Cys | Val | Gln | Glu |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |
| Asp | Cys | Arg | Ile | Pro | Gln | Ile | Glu | Asp | Ala | Glu | Ile | His | Asn | Lys |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |
| Thr | Tyr | Arg | His | Gly | Glu | Lys | Leu | Ile | Ile | Thr | Cys | His | Glu | Gly |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |
| Phe | Lys | Ile | Arg | Tyr | Pro | Asp | Leu | His | Asn | Met | Val | Ser | Leu | Cys |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |
| Arg | Asp | Asp | Gly | Thr | Trp | Asn | Asn | Leu | Pro | Ile | Cys | Gln | Gly | Cys |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |

|                 |   |     |     |     |
|-----------------|---|-----|-----|-----|
| Leu Arg Pro Leu | Ala Ser Ser Asn Gly Tyr Val Asn Ile Ser Glu | 185 | 190 | 195 |
| Leu Gln Thr Ser | Phe Pro Val Gly Thr Val Ile Ser Tyr Arg Cys | 200 | 205 | 210 |
| Phe Pro Gly Phe | Lys Leu Asp Gly Ser Ala Tyr Leu Glu Cys Leu | 215 | 220 | 225 |
| Gln Asn Leu Ile | Trp Ser Ser Ser Pro Pro Arg Cys Leu Ala Leu | 230 | 235 | 240 |
| Glu Ala Gln Val | Cys Pro Leu Pro Pro Met Val Ser His Gly Asp | 245 | 250 | 255 |
| Phe Val Cys His | Pro Arg Pro Cys Glu Arg Tyr Asn His Gly Thr | 260 | 265 | 270 |
| Val Val Glu Phe | Tyr Cys Asp Pro Gly Tyr Ser Leu Thr Ser Asp | 275 | 280 | 285 |
| Tyr Lys Tyr Ile | Thr Cys Gln Tyr Gly Glu Trp Phe Pro Ser Tyr | 290 | 295 | 300 |
| Gln Val Tyr Cys | Ile Lys Ser Glu Gln Thr Trp Pro Ser Thr His | 305 | 310 | 315 |
| Glu Thr Leu Leu | Thr Thr Trp Lys Ile Val Ala Phe Thr Ala Thr | 320 | 325 | 330 |
| Ser Val Leu Leu | Val Leu Leu Leu Val Ile Leu Ala Arg Met Phe | 335 | 340 | 345 |
| Gln Thr Lys Phe | Lys Ala His Phe Pro Pro Arg Gly Pro Pro Arg | 350 | 355 | 360 |
| Ser Ser Ser Ser | Asp Pro Asp Phe Val Val Val Asp Gly Val Pro | 365 | 370 | 375 |
| Val Met Leu Pro | Ser Tyr Asp Glu Ala Val Ser Gly Gly Leu Ser | 380 | 385 | 390 |
| Ala Leu Gly Pro | Gly Tyr Met Ala Ser Val Gly Gln Gly Cys Pro | 395 | 400 | 405 |
| Leu Pro Val Asp | Asp Gln Ser Pro Pro Ala Tyr Pro Gly Ser Gly | 410 | 415 | 420 |
| Asp Thr Asp Thr | Gly Pro Gly Glu Ser Glu Thr Cys Asp Ser Val | 425 | 430 | 435 |
| Ser Gly Ser Ser | Glu Leu Leu Gln Ser Leu Tyr Ser Pro Pro Arg | 440 | 445 | 450 |
| Cys Gln Glu Ser | Thr His Pro Ala Ser Asp Asn Pro Asp Ile Ile | 455 | 460 | 465 |
| Ala Ser Thr Ala | Glu Glu Val Ala Ser Thr Ser Pro Gly Ile His |     |     |     |

|  |     |     |     |
|--|-----|-----|-----|
|  | 470 | 475 | 480 |
|--|-----|-----|-----|

His Ala His Trp Val Leu Phe Leu Arg Asn  
           485                          490

<210> 133  
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<220>  
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<400> 133  
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<210> 134  
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<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 134  
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<210> 135  
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 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

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<210> 136  
 <211> 1815  
 <212> DNA  
 <213> Homo Sapien

<400> 136  
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 ggccttgtaa taaagtcatt tacttccatg atacttctcg aagactgaac 350  
 tttgaggaag ccaaagaagc ctgcaggagg gatggaggcc agctagtcag 400

catcgagtct gaagatgaac agaaactgat agaaaagttc attgaaaacc 450  
tcttgccatc tgatggtgac ttctggattg ggctcaggag gcgtgaggag 500  
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<210> 137

<211> 382  
 <212> PRT  
 <213> Homo Sapien

<400> 137

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Arg | Pro | Gly | Thr | Ala | Leu | Gln | Ala | Val | Leu | Leu | Ala | Val | Leu | 1   | 5   | 10  | 15 |
| Leu | Val | Gly | Leu | Arg | Ala | Ala | Thr | Gly | Arg | Leu | Leu | Ser | Ala | Ser | 20  | 25  | 30  |    |
| Asp | Leu | Asp | Leu | Arg | Gly | Gly | Gln | Pro | Val | Cys | Arg | Gly | Gly | Thr | 35  | 40  | 45  |    |
| Gln | Arg | Pro | Cys | Tyr | Lys | Val | Ile | Tyr | Phe | His | Asp | Thr | Ser | Arg | 50  | 55  | 60  |    |
| Arg | Leu | Asn | Phe | Glu | Glu | Ala | Lys | Glu | Ala | Cys | Arg | Arg | Asp | Gly | 65  | 70  | 75  |    |
| Gly | Gln | Leu | Val | Ser | Ile | Glu | Ser | Glu | Asp | Glu | Gln | Lys | Leu | Ile | 80  | 85  | 90  |    |
| Glu | Lys | Phe | Ile | Glu | Asn | Leu | Leu | Pro | Ser | Asp | Gly | Asp | Phe | Trp | 95  | 100 | 105 |    |
| Ile | Gly | Leu | Arg | Arg | Arg | Glu | Glu | Lys | Gln | Ser | Asn | Ser | Thr | Ala | 110 | 115 | 120 |    |
| Cys | Gln | Asp | Leu | Tyr | Ala | Trp | Thr | Asp | Gly | Ser | Ile | Ser | Gln | Phe | 125 | 130 | 135 |    |
| Arg | Asn | Trp | Tyr | Val | Asp | Glu | Pro | Ser | Cys | Gly | Ser | Glu | Val | Cys | 140 | 145 | 150 |    |
| Val | Val | Met | Tyr | His | Gln | Pro | Ser | Ala | Pro | Ala | Gly | Ile | Gly | Gly | 155 | 160 | 165 |    |
| Pro | Tyr | Met | Phe | Gln | Trp | Asn | Asp | Asp | Arg | Cys | Asn | Met | Lys | Asn | 170 | 175 | 180 |    |
| Asn | Phe | Ile | Cys | Lys | Tyr | Ser | Asp | Glu | Lys | Pro | Ala | Val | Pro | Ser | 185 | 190 | 195 |    |
| Arg | Glu | Ala | Glu | Gly | Glu | Glu | Thr | Glu | Leu | Thr | Thr | Pro | Val | Leu | 200 | 205 | 210 |    |
| Pro | Glu | Glu | Thr | Gln | Glu | Glu | Asp | Ala | Lys | Lys | Thr | Phe | Lys | Glu | 215 | 220 | 225 |    |
| Ser | Arg | Glu | Ala | Ala | Leu | Asn | Leu | Ala | Tyr | Ile | Leu | Ile | Pro | Ser | 230 | 235 | 240 |    |
| Ile | Pro | Leu | Leu | Leu | Leu | Val | Val | Thr | Thr | Val | Val | Cys | Trp | 245 | 250 | 255 |     |    |
| Val | Trp | Ile | Cys | Arg | Lys | Arg | Lys | Arg | Glu | Gln | Pro | Asp | Pro | Ser | 260 | 265 | 270 |    |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Thr | Lys | Lys | Gln | His | Thr | Ile | Trp | Pro | Ser | Pro | His | Gln | Gly | Asn |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Ser | Pro | Asp | Leu | Glu | Val | Tyr | Asn | Val | Ile | Arg | Lys | Gln | Ser | Glu |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| Ala | Asp | Leu | Ala | Glu | Thr | Arg | Pro | Asp | Leu | Lys | Asn | Ile | Ser | Phe |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |
| Arg | Val | Cys | Ser | Gly | Glu | Ala | Thr | Pro | Asp | Asp | Met | Ser | Cys | Asp |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |
| Tyr | Asp | Asn | Met | Ala | Val | Asn | Pro | Ser | Glu | Ser | Gly | Phe | Val | Thr |  |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |  |
| Leu | Val | Ser | Val | Glu | Ser | Gly | Phe | Val | Thr | Asn | Asp | Ile | Tyr | Glu |  |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |  |
| Phe | Ser | Pro | Asp | Gln | Met | Gly | Arg | Ser | Lys | Glu | Ser | Gly | Trp | Val |  |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |  |
| Glu | Asn | Glu | Ile | Tyr | Gly | Tyr |     |     |     |     |     |     |     |     |  |
|     |     |     |     | 380 |     |     |     |     |     |     |     |     |     |     |  |

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<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 138

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<210> 139

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 139

aagccaaaga agcctgcagg aggg 24

<210> 140

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 140

cagtccaagc ataaaggtcc tggc 24

<210> 141

<211> 1514



<212> DNA

<213> Homo Sapien

<400> 141

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ccccggcgcc cgcagaagac ttgtgtttgc ctctgcagc ctcaaccgg 150
agggcagcga gggcctacca ccatgatcac tgggtgtgtc agcatgcgct 200
tgtggacccc agtggggcgtc ctgacctgcg tggcgactg cctgcaccag 250
cggcgggtgg ccctggccga gctgcaggag gccgatggcc agtgtccggt 300
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caccaatcta gctgggtggc cgaaaccata ttctccttac gactctcaat 500
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aaaaataacca tgcactctgc tctcaaactc aggtgatgga agttggaaat 1450  
gaagagtaac tgatttataa aagcaggatg tgttgatttt aaaataaaagt 1500  
gcctttatac aatg 1514

<210> 142  
<211> 428  
<212> PRT  
<213> Homo Sapien

<400> 142  
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Val Leu Thr Ser Leu Ala Tyr Cys Leu His Gln Arg Arg Val Ala  
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35 40 45  
Ser Leu Leu Lys Leu Lys Met Val Gln Val Val Phe Arg His Gly  
50 55 60  
Ala Arg Ser Pro Leu Lys Pro Leu Pro Leu Glu Glu Gln Val Glu  
65 70 75  
Trp Asn Pro Gln Leu Leu Glu Val Pro Pro Gln Thr Gln Phe Asp  
80 85 90  
Tyr Thr Val Thr Asn Leu Ala Gly Gly Pro Lys Pro Tyr Ser Pro  
95 100 105  
Tyr Asp Ser Gln Tyr His Glu Thr Thr Leu Lys Gly Gly Met Phe  
110 115 120  
Ala Gly Gln Leu Thr Lys Val Gly Met Gln Gln Met Phe Ala Leu  
125 130 135  
Gly Glu Arg Leu Arg Lys Asn Tyr Val Glu Asp Ile Pro Phe Leu  
140 145 150  
Ser Pro Thr Phe Asn Pro Gln Glu Val Phe Ile Arg Ser Thr Asn  
155 160 165  
Ile Phe Arg Asn Leu Glu Ser Thr Arg Cys Leu Leu Ala Gly Leu  
170 175 180  
Phe Gln Cys Gln Lys Glu Gly Pro Ile Ile Ile His Thr Asp Glu  
185 190 195  
Ala Asp Ser Glu Val Leu Tyr Pro Asn Tyr Gln Ser Cys Trp Ser  
200 205 210  
Leu Arg Gln Arg Thr Arg Gly Arg Arg Gln Thr Ala Ser Leu Gln  
215 220 225  
Pro Gly Ile Ser Glu Asp Leu Lys Lys Val Lys Asp Arg Met Gly

|                 | 230                 | 235                 | 240 |
|-----------------|---------------------|---------------------|-----|
| Ile Asp Ser Ser | Asp Lys Val Asp Phe | Phe Ile Leu Leu Asp | Asn |
|                 | 245                 | 250                 | 255 |
| Val Ala Ala Glu | Gln Ala His Asn Leu | Pro Ser Cys Pro Met | Leu |
|                 | 260                 | 265                 | 270 |
| Lys Arg Phe Ala | Arg Met Ile Glu Gln | Arg Ala Val Asp Thr | Ser |
|                 | 275                 | 280                 | 285 |
| Leu Tyr Ile Leu | Pro Lys Glu Asp Arg | Glu Ser Leu Gln Met | Ala |
|                 | 290                 | 295                 | 300 |
| Val Gly Pro Phe | Leu His Ile Leu Glu | Ser Asn Leu Leu Lys | Ala |
|                 | 305                 | 310                 | 315 |
| Met Asp Ser Ala | Thr Ala Pro Asp Lys | Ile Arg Lys Leu Tyr | Leu |
|                 | 320                 | 325                 | 330 |
| Tyr Ala Ala His | Asp Val Thr Phe Ile | Pro Leu Leu Met Thr | Leu |
|                 | 335                 | 340                 | 345 |
| Gly Ile Phe Asp | His Lys Trp Pro Pro | Phe Ala Val Asp Leu | Thr |
|                 | 350                 | 355                 | 360 |
| Met Glu Leu Tyr | Gln His Leu Glu Ser | Lys Glu Trp Phe Val | Gln |
|                 | 365                 | 370                 | 375 |
| Leu Tyr Tyr His | Gly Lys Glu Gln Val | Pro Arg Gly Cys Pro | Asp |
|                 | 380                 | 385                 | 390 |
| Gly Leu Cys Pro | Leu Asp Met Phe Leu | Asn Ala Met Ser Val | Tyr |
|                 | 395                 | 400                 | 405 |
| Thr Leu Ser Pro | Glu Lys Tyr His Ala | Leu Cys Ser Gln Thr | Gln |
|                 | 410                 | 415                 | 420 |
| Val Met Glu Val | Gly Asn Glu Glu     |                     |     |
|                 | 425                 |                     |     |

<210> 143

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 143

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<210> 144

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 144  
gcagctctat taccacggga agga 24

<210> 145  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Oligonucleotide Probe

<400> 145  
tccttcccgt ggtaatagag ctgc 24

<210> 146  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Oligonucleotide Probe

<400> 146  
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<210> 147  
<211> 1686  
<212> DNA  
<213> Homo Sapien

<400> 147  
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gctctgctat tctccttgat ccttgccatt tgcaccagac ctggattcct 150  
agcgtctcca tctggagtgc ggctgggtggg gggcctccac cgctgtgaag 200  
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ggctgggaca ttaaggacgt ggctgtgttg tgccgggagc tgggctgtgg 300  
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 ttctagagga acggaatttt aaggataaat tttctgaatt ggttatgggg 1600  
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<210> 148

<211> 347

<212> PRT

<213> Homo Sapien

<400> 148

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Leu | Leu | Phe | Ser | Leu | Ile | Leu | Ala | Ile | Cys | Thr | Arg | Pro |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Phe | Leu | Ala | Ser | Pro | Ser | Gly | Val | Arg | Leu | Val | Gly | Gly | Leu |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Arg | Cys | Glu | Gly | Arg | Val | Glu | Val | Glu | Gln | Lys | Gly | Gln | Trp |
|     |     |     | 35  |     |     |     |     |     | 40  |     |     |     |     | 45  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Thr | Val | Cys | Asp | Asp | Gly | Trp | Asp | Ile | Lys | Asp | Val | Ala | Val |
|     |     |     | 50  |     |     |     |     |     | 55  |     |     |     |     | 60  |

Leu Cys Arg Glu Leu Gly Cys Gly Ala Ala Ser Gly Thr Pro Ser

|     |     |     |     |     | 65  |     |     |     |     |     | 70  |     |     |     |  |  | 75 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|----|
| Gly | Ile | Leu | Tyr | Glu | Pro | Pro | Ala | Glu | Lys | Glu | Gln | Lys | Val | Leu |  |  |    |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |  |    |
| Ile | Gln | Ser | Val | Ser | Cys | Thr | Gly | Thr | Glu | Asp | Thr | Leu | Ala | Gln |  |  |    |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |  |    |
| Cys | Glu | Gln | Glu | Glu | Val | Tyr | Asp | Cys | Ser | His | Asp | Glu | Asp | Ala |  |  |    |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |  |    |
| Gly | Ala | Ser | Cys | Glu | Asn | Pro | Glu | Ser | Ser | Phe | Ser | Pro | Val | Pro |  |  |    |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |  |    |
| Glu | Gly | Val | Arg | Leu | Ala | Asp | Gly | Pro | Gly | His | Cys | Lys | Gly | Arg |  |  |    |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |  |    |
| Val | Glu | Val | Lys | His | Gln | Asn | Gln | Trp | Tyr | Thr | Val | Cys | Gln | Thr |  |  |    |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |  |    |
| Gly | Trp | Ser | Leu | Arg | Ala | Ala | Lys | Val | Val | Cys | Arg | Gln | Leu | Gly |  |  |    |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |  |    |
| Cys | Gly | Arg | Ala | Val | Leu | Thr | Gln | Lys | Arg | Cys | Asn | Lys | His | Ala |  |  |    |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |  |    |
| Tyr | Gly | Arg | Lys | Pro | Ile | Trp | Leu | Ser | Gln | Met | Ser | Cys | Ser | Gly |  |  |    |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |  |    |
| Arg | Glu | Ala | Thr | Leu | Gln | Asp | Cys | Pro | Ser | Gly | Pro | Trp | Gly | Lys |  |  |    |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |  |    |
| Asn | Thr | Cys | Asn | His | Asp | Glu | Asp | Thr | Trp | Val | Glu | Cys | Glu | Asp |  |  |    |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |  |    |
| Pro | Phe | Asp | Leu | Arg | Leu | Val | Gly | Gly | Asp | Asn | Leu | Cys | Ser | Gly |  |  |    |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |  |    |
| Arg | Leu | Glu | Val | Leu | His | Lys | Gly | Val | Trp | Gly | Ser | Val | Cys | Asp |  |  |    |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |  |    |
| Asp | Asn | Trp | Gly | Glu | Lys | Glu | Asp | Gln | Val | Val | Cys | Lys | Gln | Leu |  |  |    |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |  |    |
| Gly | Cys | Gly | Lys | Ser | Leu | Ser | Pro | Ser | Phe | Arg | Asp | Arg | Lys | Cys |  |  |    |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |  |    |
| Tyr | Gly | Pro | Gly | Val | Gly | Arg | Ile | Trp | Leu | Asp | Asn | Val | Arg | Cys |  |  |    |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |  |    |
| Ser | Gly | Glu | Glu | Gln | Ser | Leu | Glu | Gln | Cys | Gln | His | Arg | Phe | Trp |  |  |    |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |  |    |
| Gly | Phe | His | Asp | Cys | Thr | His | Gln | Glu | Asp | Val | Ala | Val | Ile | Cys |  |  |    |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |  |  |    |
| Ser | Val |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |    |

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 ccctagaaga gctcatcaga gaacttaccg cttctcatgc caccaagggtg 400  
  
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ctaaaaacta gaaataaaca tctcaaacag taaaaaaaaa aaaaaagggc 1350  
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Gly Lys Ala Tyr Leu Arg Asn Ala Val Val Val Ile Thr Gly Ala  
35 40 45  
Thr Ser Gly Leu Gly Lys Glu Cys Ala Lys Val Phe Tyr Ala Ala  
50 55 60  
Gly Ala Lys Leu Val Leu Cys Gly Arg Asn Gly Gly Ala Leu Glu  
65 70 75



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Leu | Ile | Arg | Glu | Leu | Thr | Ala | Ser | His | Ala | Thr | Lys | Val | Gln | 80  | 85  | 90  |
| Thr | His | Lys | Pro | Tyr | Leu | Val | Thr | Phe | Asp | Leu | Thr | Asp | Ser | Gly | 95  | 100 | 105 |
| Ala | Ile | Val | Ala | Ala | Ala | Glu | Ile | Leu | Gln | Cys | Phe | Gly | Tyr |     | 110 | 115 | 120 |
| Val | Asp | Ile | Leu | Val | Asn | Asn | Ala | Gly | Ile | Ser | Tyr | Arg | Gly | Thr | 125 | 130 | 135 |
| Ile | Met | Asp | Thr | Thr | Val | Asp | Val | Asp | Lys | Arg | Val | Met | Glu | Thr | 140 | 145 | 150 |
| Asn | Tyr | Phe | Gly | Pro | Val | Ala | Leu | Thr | Lys | Ala | Leu | Leu | Pro | Ser | 155 | 160 | 165 |
| Met | Ile | Lys | Arg | Arg | Gln | Gly | His | Ile | Val | Ala | Ile | Ser | Ser | Ile | 170 | 175 | 180 |
| Gln | Gly | Lys | Met | Ser | Ile | Pro | Phe | Arg | Ser | Ala | Tyr | Ala | Ala | Ser | 185 | 190 | 195 |
| Lys | His | Ala | Thr | Gln | Ala | Phe | Phe | Asp | Cys | Leu | Arg | Ala | Glu | Met | 200 | 205 | 210 |
| Glu | Gln | Tyr | Glu | Ile | Glu | Val | Thr | Val | Ile | Ser | Pro | Gly | Tyr | Ile | 215 | 220 | 225 |
| His | Thr | Asn | Leu | Ser | Val | Asn | Ala | Ile | Thr | Ala | Asp | Gly | Ser | Arg | 230 | 235 | 240 |
| Tyr | Gly | Val | Met | Asp | Thr | Thr | Thr | Ala | Gln | Gly | Arg | Ser | Pro | Val | 245 | 250 | 255 |
| Glu | Val | Ala | Gln | Asp | Val | Leu | Ala | Ala | Val | Gly | Lys | Lys | Lys | Lys | 260 | 265 | 270 |
| Asp | Val | Ile | Leu | Ala | Asp | Leu | Leu | Pro | Ser | Leu | Ala | Val | Tyr | Leu | 275 | 280 | 285 |
| Arg | Thr | Leu | Ala | Pro | Gly | Leu | Phe | Phe | Ser | Leu | Met | Ala | Ser | Arg | 290 | 295 | 300 |
| Ala | Arg | Lys | Glu | Arg | Lys | Ser | Lys | Asn | Ser |     |     |     |     |     | 305 | 310 |     |

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<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

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<210> 155  
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<400> 155  
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<400> 156  
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atgaaatttc ttctggacat cctcctgctt ctcccgttac tgatcgtctg 150  
  
ctccctagag tccttcgtga agctttttat tcctaagagg agaaaatcag 200  
tcaccggcga aatcgtgctg attacaggag ctgggcacatg aattgggaga 250  
  
ctgactgcct atgaatttgc taaacttaaa agcaagctgg ttctctggga 300  
  
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tacagctctg caaagaagg gaaggcagaa attggagatg ttagtatttt 450  
  
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atcctcagat tgaaaagact tttgaagtta atgtacttgc acatttctgg 550

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gatgaactgg ctgccttaca aataactgga gtcaaaacaa catgtctgtg 750
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<211> 300
<212> PRT
<213> Homo Sapien

<400> 159
Met Lys Phe Leu Leu Asp Ile Leu Leu Leu Leu Pro Leu Leu Ile
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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Val | Cys | Ser | Leu | Glu | Ser | Phe | Val | Lys | Leu | Phe | Ile | Pro | Lys | Arg |  | 20  | 25  | 30  |
| Arg | Lys | Ser | Val | Thr | Gly | Glu | Ile | Val | Leu | Ile | Thr | Gly | Ala | Gly |  | 35  | 40  | 45  |
| His | Gly | Ile | Gly | Arg | Leu | Thr | Ala | Tyr | Glu | Phe | Ala | Lys | Leu | Lys |  | 50  | 55  | 60  |
| Ser | Lys | Leu | Val | Leu | Trp | Asp | Ile | Asn | Lys | His | Gly | Leu | Glu | Glu |  | 65  | 70  | 75  |
| Thr | Ala | Ala | Lys | Cys | Lys | Gly | Leu | Gly | Ala | Lys | Val | His | Thr | Phe |  | 80  | 85  | 90  |
| Val | Val | Asp | Cys | Ser | Asn | Arg | Glu | Asp | Ile | Tyr | Ser | Ser | Ala | Lys |  | 95  | 100 | 105 |
| Lys | Val | Lys | Ala | Glu | Ile | Gly | Asp | Val | Ser | Ile | Leu | Val | Asn | Asn |  | 110 | 115 | 120 |
| Ala | Gly | Val | Val | Tyr | Thr | Ser | Asp | Leu | Phe | Ala | Thr | Gln | Asp | Pro |  | 125 | 130 | 135 |
| Gln | Ile | Glu | Lys | Thr | Phe | Glu | Val | Asn | Val | Leu | Ala | His | Phe | Trp |  | 140 | 145 | 150 |
| Thr | Thr | Lys | Ala | Phe | Leu | Pro | Ala | Met | Thr | Lys | Asn | Asn | His | Gly |  | 155 | 160 | 165 |
| His | Ile | Val | Thr | Val | Ala | Ser | Ala | Ala | Gly | His | Val | Ser | Val | Pro |  | 170 | 175 | 180 |
| Phe | Leu | Leu | Ala | Tyr | Cys | Ser | Ser | Lys | Phe | Ala | Ala | Val | Gly | Phe |  | 185 | 190 | 195 |
| His | Lys | Thr | Leu | Thr | Asp | Glu | Leu | Ala | Ala | Leu | Gln | Ile | Thr | Gly |  | 200 | 205 | 210 |
| Val | Lys | Thr | Thr | Cys | Leu | Cys | Pro | Asn | Phe | Val | Asn | Thr | Gly | Phe |  | 215 | 220 | 225 |
| Ile | Lys | Asn | Pro | Ser | Thr | Ser | Leu | Gly | Pro | Thr | Leu | Glu | Pro | Glu |  | 230 | 235 | 240 |
| Glu | Val | Val | Asn | Arg | Leu | Met | His | Gly | Ile | Leu | Thr | Glu | Gln | Lys |  | 245 | 250 | 255 |
| Met | Ile | Phe | Ile | Pro | Ser | Ser | Ile | Ala | Phe | Leu | Thr | Thr | Leu | Glu |  | 260 | 265 | 270 |
| Arg | Ile | Leu | Pro | Glu | Arg | Phe | Leu | Ala | Val | Leu | Lys | Arg | Lys | Ile |  | 275 | 280 | 285 |
| Ser | Val | Lys | Phe | Asp | Ala | Val | Ile | Gly | Tyr | Lys | Met | Lys | Ala | Gln |  | 290 | 295 | 300 |

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 <223> Synthetic Oligonucleotide Probe  
  
 <400> 161  
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 ttggtgccat gtggaagggtg attgtttcgc tggtcctggt gatgcctggc 150  
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agtgcagttg taacaaacaa agctgtaaca tctttttctg ccaataacag 1900  
aagtttggca tgccgtgaag gtgtttggaa atattattgg ataagaatag 1950  
ctcaattatc ccaaataaat ggatgaagct ataatagttt tggggaaaag 2000  
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<211> 476

<212> PRT

<213> Homo Sapien

<400> 164

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Gly | Ala | Met | Trp | Lys | Val | Ile | Val | Ser | Leu | Val | Leu | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Pro | Gly | Pro | Cys | Asp | Gly | Leu | Phe | Arg | Ser | Leu | Tyr | Arg | Ser |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Ser | Met | Pro | Pro | Lys | Gly | Asp | Ser | Gly | Gln | Pro | Leu | Phe | Leu |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Pro | Tyr | Ile | Glu | Ala | Gly | Lys | Ile | Gln | Lys | Gly | Arg | Glu | Leu |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | Val | Gly | Pro | Phe | Pro | Gly | Leu | Asn | Met | Lys | Ser | Tyr | Ala |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Phe | Leu | Thr | Val | Asn | Lys | Thr | Tyr | Asn | Ser | Asn | Leu | Phe | Phe |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Phe | Phe | Pro | Ala | Gln | Ile | Gln | Pro | Glu | Asp | Ala | Pro | Val | Val |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Trp | Leu | Gln | Gly | Gly | Pro | Gly | Gly | Ser | Ser | Met | Phe | Gly | Leu |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Val | Glu | His | Gly | Pro | Tyr | Val | Val | Thr | Ser | Asn | Met | Thr | Leu |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Asp | Arg | Asp | Phe | Pro | Trp | Thr | Thr | Thr | Leu | Ser | Met | Leu | Tyr |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Asp | Asn | Pro | Val | Gly | Thr | Gly | Phe | Ser | Phe | Thr | Asp | Asp | Thr |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Gly | Tyr | Ala | Val | Asn | Glu | Asp | Asp | Val | Ala | Arg | Asp | Leu | Tyr |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ala | Leu | Ile | Gln | Phe | Phe | Gln | Ile | Phe | Pro | Glu | Tyr | Lys | Asn |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Asp | Phe | Tyr | Val | Thr | Gly | Glu | Ser | Tyr | Ala | Gly | Lys | Tyr | Val |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Ile | Ala | His | Leu | Ile | His | Ser | Leu | Asn | Pro | Val | Arg | Glu |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Lys | Ile | Asn | Leu | Asn | Gly | Ile | Ala | Ile | Gly | Asp | Gly | Tyr | Ser |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Pro | Glu | Ser | Ile | Ile | Gly | Gly | Tyr | Ala | Glu | Phe | Leu | Tyr | Gln |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |

|   |     |     |     |
|---|-----|-----|-----|
| Ile Gly Leu Leu Asp Glu Lys Gln Lys Lys Tyr Phe Gln Lys Gln | 260 | 265 | 270 |
| Cys His Glu Cys Ile Glu His Ile Arg Lys Gln Asn Trp Phe Glu | 275 | 280 | 285 |
| Ala Phe Glu Ile Leu Asp Lys Leu Leu Asp Gly Asp Leu Thr Ser | 290 | 295 | 300 |
| Asp Pro Ser Tyr Phe Gln Asn Val Thr Gly Cys Ser Asn Tyr Tyr | 305 | 310 | 315 |
| Asn Phe Leu Arg Cys Thr Glu Pro Glu Asp Gln Leu Tyr Tyr Val | 320 | 325 | 330 |
| Lys Phe Leu Ser Leu Pro Glu Val Arg Gln Ala Ile His Val Gly | 335 | 340 | 345 |
| Asn Gln Thr Phe Asn Asp Gly Thr Ile Val Glu Lys Tyr Leu Arg | 350 | 355 | 360 |
| Glu Asp Thr Val Gln Ser Val Lys Pro Trp Leu Thr Glu Ile Met | 365 | 370 | 375 |
| Asn Asn Tyr Lys Val Leu Ile Tyr Asn Gly Gln Leu Asp Ile Ile | 380 | 385 | 390 |
| Val Ala Ala Ala Leu Thr Glu Arg Ser Leu Met Gly Met Asp Trp | 395 | 400 | 405 |
| Lys Gly Ser Gln Glu Tyr Lys Lys Ala Glu Lys Lys Val Trp Lys | 410 | 415 | 420 |
| Ile Phe Lys Ser Asp Ser Glu Val Ala Gly Tyr Ile Arg Gln Ala | 425 | 430 | 435 |
| Gly Asp Phe His Gln Val Ile Ile Arg Gly Gly Gly His Ile Leu | 440 | 445 | 450 |
| Pro Tyr Asp Gln Pro Leu Arg Ala Phe Asp Met Ile Asn Arg Phe | 455 | 460 | 465 |
| Ile Tyr Gly Lys Gly Trp Asp Pro Tyr Val Gly                 | 470 | 475 |     |

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<211> 24

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<220>

<223> Synthetic Oligonucleotide Probe

<400> 165

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<210> 166

<211> 24

<212> DNA



<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 166

tggatgaggt gtgcaatggc tggc 24

<210> 167

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 167

agctctcaga ggctgggtcat aggg 24

<210> 168

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 168

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<210> 169

<211> 2477

<212> DNA

<213> Homo Sapien

<400> 169

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agctagtgat caggggttct tcttgctgga gaagaaaggg ctgagggcag 150

agcagggcac tctcactcag ggtgaccagc tccttgcttc tctgtggata 200

acagagcatg agaaagtga gagatgcagc ggagtgaggt gatggaagtc 250

taaaatagga aggaattttg tgtgcaatat cagactctgg gagcagttga 300

cctggagagc ctgggggagg gcctgcctaa caagctttca aaaaacagga 350

gcgacttcca ctgggctggg ataagacgtg ccggtaggat agggaagact 400

gggttttagtc ctaatatcaa attgactggc tgggtgaact tcaacagcct 450

tttaacctct ctgggagatg aaaacgatgg cttaaggggc cagaaataga 500

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<210> 170

<211> 552

<212> PRT

<213> Homo Sapien

<400> 170

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Gly | Thr | Leu | Gly | Gln | Ala | Ser | Leu | Phe | Ala | Pro | Pro | Gly | Asn | 1   | 5   | 10  | 15 |
| Tyr | Phe | Trp | Ser | Asp | His | Ser | Ala | Leu | Cys | Phe | Ala | Glu | Ser | Cys | 20  | 25  | 30  |    |
| Glu | Gly | Gln | Pro | Gly | Lys | Val | Glu | Gln | Met | Ser | Thr | His | Arg | Ser | 35  | 40  | 45  |    |
| Arg | Leu | Leu | Thr | Ala | Ala | Pro | Leu | Ser | Met | Glu | Gln | Arg | Gln | Pro | 50  | 55  | 60  |    |
| Trp | Pro | Arg | Ala | Leu | Glu | Val | Asp | Ser | Arg | Ser | Val | Val | Leu | Leu | 65  | 70  | 75  |    |
| Ser | Val | Val | Trp | Val | Leu | Leu | Ala | Pro | Pro | Ala | Ala | Gly | Met | Pro | 80  | 85  | 90  |    |
| Gln | Phe | Ser | Thr | Phe | His | Ser | Glu | Asn | Arg | Asp | Trp | Thr | Phe | Asn | 95  | 100 | 105 |    |
| His | Leu | Thr | Val | His | Gln | Gly | Thr | Gly | Ala | Val | Tyr | Val | Gly | Ala | 110 | 115 | 120 |    |
| Ile | Asn | Arg | Val | Tyr | Lys | Leu | Thr | Gly | Asn | Leu | Thr | Ile | Gln | Val | 125 | 130 | 135 |    |
| Ala | His | Lys | Thr | Gly | Pro | Glu | Glu | Asp | Asn | Lys | Ser | Arg | Tyr | Pro | 140 | 145 | 150 |    |
| Pro | Leu | Ile | Val | Gln | Pro | Cys | Ser | Glu | Val | Leu | Thr | Leu | Thr | Asn | 155 | 160 | 165 |    |
| Asn | Val | Asn | Lys | Leu | Leu | Ile | Ile | Asp | Tyr | Ser | Glu | Asn | Arg | Leu | 170 | 175 | 180 |    |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Ala | Cys | Gly | Ser | Leu | Tyr | Gln | Gly | Val | Cys | Lys | Leu | Leu | Arg |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Leu | Asp | Asp | Leu | Phe | Ile | Leu | Val | Glu | Pro | Ser | His | Lys | Lys | Glu |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| His | Tyr | Leu | Ser | Ser | Val | Asn | Lys | Thr | Gly | Thr | Met | Tyr | Gly | Val |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Ile | Val | Arg | Ser | Glu | Gly | Glu | Asp | Gly | Lys | Leu | Phe | Ile | Gly | Thr |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Ala | Val | Asp | Gly | Lys | Gln | Asp | Tyr | Phe | Pro | Thr | Leu | Ser | Ser | Arg |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Lys | Leu | Pro | Arg | Asp | Pro | Glu | Ser | Ser | Ala | Met | Leu | Asp | Tyr | Glu |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Leu | His | Ser | Asp | Phe | Val | Ser | Ser | Leu | Ile | Lys | Ile | Pro | Ser | Asp |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Thr | Leu | Ala | Leu | Val | Ser | His | Phe | Asp | Ile | Phe | Tyr | Ile | Tyr | Gly |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| Phe | Ala | Ser | Gly | Gly | Phe | Val | Tyr | Phe | Leu | Thr | Val | Gln | Pro | Glu |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |
| Thr | Pro | Glu | Gly | Val | Ala | Ile | Asn | Ser | Ala | Gly | Asp | Leu | Phe | Tyr |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |
| Thr | Ser | Arg | Ile | Val | Arg | Leu | Cys | Lys | Asp | Asp | Pro | Lys | Phe | His |  |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |  |
| Ser | Tyr | Val | Ser | Leu | Pro | Phe | Gly | Cys | Thr | Arg | Ala | Gly | Val | Glu |  |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |  |
| Tyr | Arg | Leu | Leu | Gln | Ala | Ala | Tyr | Leu | Ala | Lys | Pro | Gly | Asp | Ser |  |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |  |
| Leu | Ala | Gln | Ala | Phe | Asn | Ile | Thr | Ser | Gln | Asp | Asp | Val | Leu | Phe |  |
|     |     |     |     | 380 |     |     |     |     | 385 |     |     |     |     | 390 |  |
| Ala | Ile | Phe | Ser | Lys | Gly | Gln | Lys | Gln | Tyr | His | His | Pro | Pro | Asp |  |
|     |     |     |     | 395 |     |     |     |     | 400 |     |     |     |     | 405 |  |
| Asp | Ser | Ala | Leu | Cys | Ala | Phe | Pro | Ile | Arg | Ala | Ile | Asn | Leu | Gln |  |
|     |     |     |     | 410 |     |     |     |     | 415 |     |     |     |     | 420 |  |
| Ile | Lys | Glu | Arg | Leu | Gln | Ser | Cys | Tyr | Gln | Gly | Glu | Gly | Asn | Leu |  |
|     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |     | 435 |  |
| Glu | Leu | Asn | Trp | Leu | Leu | Gly | Lys | Asp | Val | Gln | Cys | Thr | Lys | Ala |  |
|     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     | 450 |  |
| Pro | Val | Pro | Ile | Asp | Asp | Asn | Phe | Cys | Gly | Leu | Asp | Ile | Asn | Gln |  |
|     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     | 465 |  |
| Pro | Leu | Gly | Gly | Ser | Thr | Pro | Val | Glu | Gly | Leu | Thr | Leu | Tyr | Thr |  |

|                 |                     |                         |     |     |     |
|-----------------|---------------------|-------------------------|-----|-----|-----|
|                 | 470                 |                         | 475 |     | 480 |
| Thr Ser Arg Asp | Arg Met Thr Ser Val | Ala Ser Tyr Val Tyr Asn |     |     |     |
|                 | 485                 | 490                     |     | 495 |     |
| Gly Tyr Ser Val | Val Phe Val Gly Thr | Lys Ser Gly Lys Leu Lys |     |     |     |
|                 | 500                 | 505                     |     | 510 |     |
| Lys Val Arg Val | Tyr Glu Phe Arg Cys | Ser Asn Ala Ile His Leu |     |     |     |
|                 | 515                 | 520                     |     | 525 |     |
| Leu Ser Lys Glu | Ser Leu Leu Glu Gly | Ser Tyr Trp Trp Arg Phe |     |     |     |
|                 | 530                 | 535                     |     | 540 |     |
| Asn Tyr Arg Gln | Leu Tyr Phe Leu Gly | Glu Gln Arg             |     |     |     |
|                 | 545                 | 550                     |     |     |     |

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<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 171  
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<220>  
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<400> 172  
 cttctgccct ttggagaaga tggc 24

<210> 173  
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 <223> unknown base

<400> 174

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ccgcacgctg ggactcctgc tgctggctgt cttgggcttc ctggtgctcc 150  
gcaggctgga ctggagcacc ctggtccctc tgcggctccg ccatcgacag 200  
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tgatgtccag ggtggtgcca ctccagtaca agcgtggggg acctatcatt 650  
gccgtgcagg tggagaatga atatggttcc tataataaag accccgcata 700  
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tcctgacttc agacaacaag gatgggctga gcaaggggat tgtccaggga 800  
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gaagtgtgtc caagtccgca tttgagcctt gttctggggc ccagcccaac 3050  
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tcacaa 3106

<210> 175  
<211> 636  
<212> PRT  
<213> Homo Sapien

<220>  
<221> unsure  
<222> 539  
<223> unknown amino acid

<400> 175  
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Asp Trp Ser Thr Leu Val Pro Leu Arg Leu Arg His Arg Gln Leu  
35 40 45  
Gly Leu Gln Ala Lys Gly Trp Asn Phe Met Leu Glu Asp Ser Thr  
50 55 60  
Phe Trp Ile Phe Gly Gly Ser Ile His Tyr Phe Arg Val Pro Arg  
65 70 75  
Glu Tyr Trp Arg Asp Arg Leu Leu Lys Met Lys Ala Cys Gly Leu  
80 85 90  
Asn Thr Leu Thr Thr Tyr Val Pro Trp Asn Leu His Glu Pro Glu  
95 100 105  
Arg Gly Lys Phe Asp Phe Ser Gly Asn Leu Asp Leu Glu Ala Phe  
110 115 120  
Val Leu Met Ala Ala Glu Ile Gly Leu Trp Val Ile Leu Arg Pro  
125 130 135  
Gly Pro Tyr Ile Cys Ser Glu Met Asp Leu Gly Gly Leu Pro Ser  
140 145 150  
Trp Leu Leu Gln Asp Pro Gly Met Arg Leu Arg Thr Thr Tyr Lys  
155 160 165  
Gly Phe Thr Glu Ala Val Asp Leu Tyr Phe Asp His Leu Met Ser  
170 175 180  
Arg Val Val Pro Leu Gln Tyr Lys Arg Gly Gly Pro Ile Ile Ala  
185 190 195  
Val Gln Val Glu Asn Glu Tyr Gly Ser Tyr Asn Lys Asp Pro Ala  
200 205 210



|                 |   |     |     |     |
|-----------------|---|-----|-----|-----|
| Tyr Met Pro Tyr | Val Lys Lys Ala Leu Glu Asp Arg Gly Ile Val | 215 | 220 | 225 |
| Glu Leu Leu Leu | Thr Ser Asp Asn Lys Asp Gly Leu Ser Lys Gly | 230 | 235 | 240 |
| Ile Val Gln Gly | Val Leu Ala Thr Ile Asn Leu Gln Ser Thr His | 245 | 250 | 255 |
| Glu Leu Gln Leu | Leu Thr Thr Phe Leu Phe Asn Val Gln Gly Thr | 260 | 265 | 270 |
| Gln Pro Lys Met | Val Met Glu Tyr Trp Thr Gly Trp Phe Asp Ser | 275 | 280 | 285 |
| Trp Gly Gly Pro | His Asn Ile Leu Asp Ser Ser Glu Val Leu Lys | 290 | 295 | 300 |
| Thr Val Ser Ala | Ile Val Asp Ala Gly Ser Ser Ile Asn Leu Tyr | 305 | 310 | 315 |
| Met Phe His Gly | Gly Thr Asn Phe Gly Phe Met Asn Gly Ala Met | 320 | 325 | 330 |
| His Phe His Asp | Tyr Lys Ser Asp Val Thr Ser Tyr Asp Tyr Asp | 335 | 340 | 345 |
| Ala Val Leu Thr | Glu Ala Gly Asp Tyr Thr Ala Lys Tyr Met Lys | 350 | 355 | 360 |
| Leu Arg Asp Phe | Phe Gly Ser Ile Ser Gly Ile Pro Leu Pro Pro | 365 | 370 | 375 |
| Pro Pro Asp Leu | Leu Pro Lys Met Pro Tyr Glu Pro Leu Thr Pro | 380 | 385 | 390 |
| Val Leu Tyr Leu | Ser Leu Trp Asp Ala Leu Lys Tyr Leu Gly Glu | 395 | 400 | 405 |
| Pro Ile Lys Ser | Glu Lys Pro Ile Asn Met Glu Asn Leu Pro Val | 410 | 415 | 420 |
| Asn Gly Gly Asn | Gly Gln Ser Phe Gly Tyr Ile Leu Tyr Glu Thr | 425 | 430 | 435 |
| Ser Ile Thr Ser | Ser Gly Ile Leu Ser Gly His Val His Asp Arg | 440 | 445 | 450 |
| Gly Gln Val Phe | Val Asn Thr Val Ser Ile Gly Phe Leu Asp Tyr | 455 | 460 | 465 |
| Lys Thr Thr Lys | Ile Ala Val Pro Leu Ile Gln Gly Tyr Thr Val | 470 | 475 | 480 |
| Leu Arg Ile Leu | Val Glu Asn Arg Gly Arg Val Asn Tyr Gly Glu | 485 | 490 | 495 |
| Asn Ile Asp Asp | Gln Arg Lys Gly Leu Ile Gly Asn Leu Tyr Leu |     |     |     |

|                 | 500                 | 505                 | 510 |
|-----------------|---------------------|---------------------|-----|
| Asn Asp Ser Pro | Leu Lys Asn Phe Arg | Ile Tyr Ser Leu Asp | Met |
|                 | 515                 | 520                 | 525 |
| Lys Lys Ser Phe | Phe Gln Arg Phe Gly | Leu Asp Lys Trp Xaa | Ser |
|                 | 530                 | 535                 | 540 |
| Leu Pro Glu Thr | Pro Thr Leu Pro Ala | Phe Phe Leu Gly Ser | Leu |
|                 | 545                 | 550                 | 555 |
| Ser Ile Ser Ser | Thr Pro Cys Asp Thr | Phe Leu Lys Leu Glu | Gly |
|                 | 560                 | 565                 | 570 |
| Trp Glu Lys Gly | Val Val Phe Ile Asn | Gly Gln Asn Leu Gly | Arg |
|                 | 575                 | 580                 | 585 |
| Tyr Trp Asn Ile | Gly Pro Gln Lys Thr | Leu Tyr Leu Pro Gly | Pro |
|                 | 590                 | 595                 | 600 |
| Trp Leu Ser Ser | Gly Ile Asn Gln Val | Ile Val Phe Glu Glu | Thr |
|                 | 605                 | 610                 | 615 |
| Met Ala Gly Pro | Ala Leu Gln Phe Thr | Glu Thr Pro His Leu | Gly |
|                 | 620                 | 625                 | 630 |
| Arg Asn Gln Tyr | Ile Lys             |                     |     |
|                 | 635                 |                     |     |

<210> 176  
 <211> 2505  
 <212> DNA  
 <213> Homo Sapien

<400> 176  
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 ggtccaggga ccctggtgag gggtctctac ttggccttcg gtgggggtca 100  
 agacgcaggc acctacgcca aaggggagca aagccgggct cgccccgagg 150  
 cccccaggac ctccatctcc caatgttggg ggaatccgac acgtgacggt 200  
 ctgtccgccc tctcagacta gaggagcgt gtaaacgcca tggctcccaa 250  
 gaagctgtcc tgccttcggt ccctgctgct gccgctcagc ctgacgctac 300  
 tgctgccccca ggcagacact cggtcggttc tagtggatag gggcatgac 350  
 cggtttctcc tagacggggc cccgttcgc tatgtgtctg gcagcctgca 400  
 ctactttcgg gtaccgcggg tgctttgggc cgaccggctt ttgaagatgc 450  
 gatggagcgg cctcaacgcc atacagtttt atgtgccctg gaactaccac 500  
 gagccacagc ctgggggtcta taactttaat ggcagccggg acctcattgc 550  
 ctttctgaat gaggcagctc tagcgaacct gttggtcata ctgagaccag 600

gaccttacat ctgtgcagag tgggagatgg ggggtctccc atcctgggtg 650  
 cttcgaaaac ctgaaattca tctaagaacc tcagatccag acttccttgc 700  
 cgcagtggac tcctggttca aggtcttgct gccaagata tatccatggc 750  
 tttatcacia tgggggcaac atcattagca ttcaggtgga gaatgaatat 800  
 ggtagctaca gagcctgtga cttcagctac atgaggcact tggctgggct 850  
 cttccgtgca ctgctaggag aaaagatctt gctcttcacc acagatgggc 900  
 ctgaaggact caagtgtggc tccctccggg gactctatac cactgtagat 950  
 tttggcccag ctgacaacat gacccaaatc tttaccctgc ttcggaagta 1000  
 tgaaccccat gggccattgg taaactctga gtactacaca ggctggctgg 1050  
 attactgggg ccagaatcac tccacacggg ctgtgtcagc tgtaacccaa 1100  
 ggactagaga acatgctcaa gttgggagcc agtgtgaaca tgtacatgtt 1150  
 ccatggagggt accaactttg gatattggaa tgggtgccgat aagaaggac 1200  
 gcttccttcc gattactacc agctatgact atgatgcacc tataatctgaa 1250  
 gcaggggacc ccacaccta gctttttgct cttcgagatg tcatcagcaa 1300  
 gttccaggaa gttccttttg gacctttacc tccccgagc cccaagatga 1350  
 tgcttggacc tgtgactctg cacctgggtg ggcatttact ggctttccta 1400  
 gacttgcttt gccccgtgg gccattcat tcaatcttgc caatgacctt 1450  
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 cccataccat ttttgagcca acaccattct gggtgccaaa taatggagtc 1550  
 catgaccgtg cctatgtgat ggtggatggg gtgttccagg gtgttggtga 1600  
 gcgaaatatg agagacaaac tatttttgac ggggaaactg gggtcctaac 1650  
 tggatatctt ggtggagaac atggggaggg tcagcttttg gtctaacagc 1700  
 agtgacttca agggcctgtt gaagccacca attctggggc aaacaatcct 1750  
 taccagtggt atgatgttcc ctctgaaaat tgataacott gtgaagtggg 1800  
 gggttccctt ccagttgcca aaatggccat atcctcaagc tccttctggc 1850  
 cccacattct actccaaaac atttccaatt ttaggctcag ttgggggacac 1900  
 atttctatat ctacctggat ggaccaaggg ccaagtctgg atcaatgggt 1950  
 ttaacttggg ccggtactgg acaaagcagg ggccacaaca gaccctctac 2000  
 gtgccaaagt tcctgctgtt tcctagggga gccctcaaca aaattacatt 2050  
 gctggaacta gaagatgtac ctctccagcc ccaagtccaa tttttggata 2100

agcctatcct caatagcact agtactttgc acaggacaca tatcaattcc 2150  
 ctttcagctg atacactgag tgcctctgaa ccaatggagt taagtgggca 2200  
 ctgaaaggta ggccgggcat ggtgggtcat gcctgtaatc ccagcacttt 2250  
 gggagggtga gacgggtgga ttacctgagg tcaggacttc aagaccagcc 2300  
 tggccaacat ggtgaaaccc cgtctccact aaaaatacaa aaattagccg 2350  
 ggcgtgatgg tgggcacctc taatcccagc tacttggggag gctgagggca 2400  
 ggagaattgc ttgaatccag gaggcagagg ttgcagtga gaggagttgt 2450  
 accactgcac tccagcctgg ctgacagtga gacactccat ctcaaaaaaa 2500  
 aaaaa 2505

<210> 177  
 <211> 654  
 <212> PRT  
 <213> Homo Sapien

<400> 177  
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 Leu Ser Leu Thr Leu Leu Leu Pro Gln Ala Asp Thr Arg Ser Phe  
 20 25 30  
 Val Val Asp Arg Gly His Asp Arg Phe Leu Leu Asp Gly Ala Pro  
 35 40 45  
 Phe Arg Tyr Val Ser Gly Ser Leu His Tyr Phe Arg Val Pro Arg  
 50 55 60  
 Val Leu Trp Ala Asp Arg Leu Leu Lys Met Arg Trp Ser Gly Leu  
 65 70 75  
 Asn Ala Ile Gln Phe Tyr Val Pro Trp Asn Tyr His Glu Pro Gln  
 80 85 90  
 Pro Gly Val Tyr Asn Phe Asn Gly Ser Arg Asp Leu Ile Ala Phe  
 95 100 105  
 Leu Asn Glu Ala Ala Leu Ala Asn Leu Leu Val Ile Leu Arg Pro  
 110 115 120  
 Gly Pro Tyr Ile Cys Ala Glu Trp Glu Met Gly Gly Leu Pro Ser  
 125 130 135  
 Trp Leu Leu Arg Lys Pro Glu Ile His Leu Arg Thr Ser Asp Pro  
 140 145 150  
 Asp Phe Leu Ala Ala Val Asp Ser Trp Phe Lys Val Leu Leu Pro  
 155 160 165  
 Lys Ile Tyr Pro Trp Leu Tyr His Asn Gly Gly Asn Ile Ile Ser  
 170 175 180

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ile | Gln | Val | Glu | Asn | Glu | Tyr | Gly | Ser | Tyr | Arg | Ala | Cys | Asp | Phe |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Ser | Tyr | Met | Arg | His | Leu | Ala | Gly | Leu | Phe | Arg | Ala | Leu | Leu | Gly |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Glu | Lys | Ile | Leu | Leu | Phe | Thr | Thr | Asp | Gly | Pro | Glu | Gly | Leu | Lys |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Cys | Gly | Ser | Leu | Arg | Gly | Leu | Tyr | Thr | Thr | Val | Asp | Phe | Gly | Pro |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Ala | Asp | Asn | Met | Thr | Lys | Ile | Phe | Thr | Leu | Leu | Arg | Lys | Tyr | Glu |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Pro | His | Gly | Pro | Leu | Val | Asn | Ser | Glu | Tyr | Tyr | Thr | Gly | Trp | Leu |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Asp | Tyr | Trp | Gly | Gln | Asn | His | Ser | Thr | Arg | Ser | Val | Ser | Ala | Val |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Thr | Lys | Gly | Leu | Glu | Asn | Met | Leu | Lys | Leu | Gly | Ala | Ser | Val | Asn |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| Met | Tyr | Met | Phe | His | Gly | Gly | Thr | Asn | Phe | Gly | Tyr | Trp | Asn | Gly |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |
| Ala | Asp | Lys | Lys | Gly | Arg | Phe | Leu | Pro | Ile | Thr | Thr | Ser | Tyr | Asp |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |
| Tyr | Asp | Ala | Pro | Ile | Ser | Glu | Ala | Gly | Asp | Pro | Thr | Pro | Lys | Leu |  |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |  |
| Phe | Ala | Leu | Arg | Asp | Val | Ile | Ser | Lys | Phe | Gln | Glu | Val | Pro | Leu |  |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |  |
| Gly | Pro | Leu | Pro | Pro | Pro | Ser | Pro | Lys | Met | Met | Leu | Gly | Pro | Val |  |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |  |
| Thr | Leu | His | Leu | Val | Gly | His | Leu | Leu | Ala | Phe | Leu | Asp | Leu | Leu |  |
|     |     |     |     | 380 |     |     |     |     | 385 |     |     |     |     | 390 |  |
| Cys | Pro | Arg | Gly | Pro | Ile | His | Ser | Ile | Leu | Pro | Met | Thr | Phe | Glu |  |
|     |     |     |     | 395 |     |     |     |     | 400 |     |     |     |     | 405 |  |
| Ala | Val | Lys | Gln | Asp | His | Gly | Phe | Met | Leu | Tyr | Arg | Thr | Tyr | Met |  |
|     |     |     |     | 410 |     |     |     |     | 415 |     |     |     |     | 420 |  |
| Thr | His | Thr | Ile | Phe | Glu | Pro | Thr | Pro | Phe | Trp | Val | Pro | Asn | Asn |  |
|     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |     | 435 |  |
| Gly | Val | His | Asp | Arg | Ala | Tyr | Val | Met | Val | Asp | Gly | Val | Phe | Gln |  |
|     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     | 450 |  |
| Gly | Val | Val | Glu | Arg | Asn | Met | Arg | Asp | Lys | Leu | Phe | Leu | Thr | Gly |  |
|     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     | 465 |  |
| Lys | Leu | Gly | Ser | Lys | Leu | Asp | Ile | Leu | Val | Glu | Asn | Met | Gly | Arg |  |

| 470                                 | 475                     | 480 |
|-------------------------------------|-------------------------|-----|
| Leu Ser Phe Gly Ser Asn Ser Ser Asp | Phe Lys Gly Leu Leu Lys |     |
| 485                                 | 490                     | 495 |
| Pro Pro Ile Leu Gly Gln Thr Ile Leu | Thr Gln Trp Met Met Phe |     |
| 500                                 | 505                     | 510 |
| Pro Leu Lys Ile Asp Asn Leu Val Lys | Trp Trp Phe Pro Leu Gln |     |
| 515                                 | 520                     | 525 |
| Leu Pro Lys Trp Pro Tyr Pro Gln Ala | Pro Ser Gly Pro Thr Phe |     |
| 530                                 | 535                     | 540 |
| Tyr Ser Lys Thr Phe Pro Ile Leu Gly | Ser Val Gly Asp Thr Phe |     |
| 545                                 | 550                     | 555 |
| Leu Tyr Leu Pro Gly Trp Thr Lys Gly | Gln Val Trp Ile Asn Gly |     |
| 560                                 | 565                     | 570 |
| Phe Asn Leu Gly Arg Tyr Trp Thr Lys | Gln Gly Pro Gln Gln Thr |     |
| 575                                 | 580                     | 585 |
| Leu Tyr Val Pro Arg Phe Leu Leu Phe | Pro Arg Gly Ala Leu Asn |     |
| 590                                 | 595                     | 600 |
| Lys Ile Thr Leu Leu Glu Leu Glu Asp | Val Pro Leu Gln Pro Gln |     |
| 605                                 | 610                     | 615 |
| Val Gln Phe Leu Asp Lys Pro Ile Leu | Asn Ser Thr Ser Thr Leu |     |
| 620                                 | 625                     | 630 |
| His Arg Thr His Ile Asn Ser Leu Ser | Ala Asp Thr Leu Ser Ala |     |
| 635                                 | 640                     | 645 |
| Ser Glu Pro Met Glu Leu Ser Gly His |                         |     |
| 650                                 |                         |     |

<210> 178

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 178

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<210> 179

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 179

tggaacaatc cccttgctca gcc 24

<210> 180  
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 <212> DNA  
 <213> Artificial Sequence  
  
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 <223> Synthetic Oligonucleotide Probe  
  
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 <211> 22  
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 <213> Artificial Sequence  
  
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 <223> Synthetic Oligonucleotide Probe  
  
 <400> 181  
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 <210> 182  
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 <223> Synthetic Oligonucleotide Probe  
  
 <400> 182  
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 <210> 183  
 <211> 50  
 <212> DNA  
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 <220>  
 <223> Synthetic Oligonucleotide Probe  
  
 <400> 183  
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 <210> 184  
 <211> 1947  
 <212> DNA  
 <213> Homo Sapien  
  
 <400> 184  
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 gtatttgagt gcaccacaaa tatggcttac atgttgaaaa agcttctcat 100  
  
 cagttacata tccattatTT gtgtttatgg ctttatctgc ctctacactc 150  
  
 tcttctgggtt attcaggata cctttgaagg aatattcttt cgaaaaagtc 200

agagaagaga gcagtttttag tgacattcca gatgtcaaaa acgatttttgc 250  
 gttccttctt cacatggttag accagtatga ccagctatat tccaagcggt 300  
 ttggtgtggt cttgtcagaa gttagtgaat ataaacttag ggaaattagt 350  
 ttgaaccatg agtggacatt tgaaaaactc aggcagcaca tttcacgcaa 400  
 cgcccaggac aagcaggagt tgcattctgt catgctgtcg ggggtgcccg 450  
 atgctgtctt tgacctcaca gacctggatg tgctaaagct tgaactaatt 500  
 ccagaagcta aaattcctgc taagatttct caaatgacta acctccaaga 550  
 gctccacctc tgccactgcc ctgcaaaagt tgaacagact gcttttagct 600  
 ttcttcgcga tcacttgaga tgccttcacg tgaagtccac tgatgtggct 650  
 gaaattcctg cctgggtgta tttgctcaaa aaccttcgag agttgtactt 700  
 aataggcaat ttgaactctg aaaacaataa gatgatagga cttgaatctc 750  
 tccgagagtt gcggcacctt aagattctcc acgtgaagag caatttgacc 800  
 aaagttccct ccaacattac agatgtggct ccacatctta caaagttagt 850  
 cattcataat gacggcacta aactcttggt actgaacagc ctttaagaaa 900  
 tgatgaatgt cgctgagctg gaactccaga actgtgagct agagagaatc 950  
 ccacatgcta ttttcagcct ctctaattta caggaactgg atttaaagtc 1000  
 caataacatt cgcacaattg aggaaatcat cagtttccag catttaaaac 1050  
 gactgacttg tttaaaatta tggcataaca aaattgttac tattcctccc 1100  
 tctattaccc atgtcaaaaa cttggagtca ctttatttct ctaacaacaa 1150  
 gctcgaatcc ttaccagtgg cagtatttag ttacagaaa ctcagatgct 1200  
 tagatgtgag ctacaacaac atttcaatga ttccaataga aataggattg 1250  
 cttcagaacc tgcagcattt gcatatcact gggaacaaag tggacattct 1300  
 gccaaaacaa ttgttttaaat gcataaagtt gaggactttg aatctgggac 1350  
 agaactgcat cacctcactc ccagagaaaag ttggtcagct ctcccagctc 1400  
 actcagctgg agctgaaggg gaactgcttg gaccgcctgc cagcccagct 1450  
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 aatattccct ttgcaaatgg gatttaaact aagataatat atgcacagtg 1600  
 atgtgcagga acaacttcct agattgcaag tgctcacgta caagttatta 1650  
 caagataatg catttttagga gtagatacat cttttaaaat aaaacagaga 1700



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 ggggttttaag tcattcattt ccaaatacatt tttttttttc ttttggggaa 1800  
 agggaaggaa aaattataat cactaatctt gggtcttttt aaattgtttg 1850  
 taacttggat gctgccgcta ctgaatgttt acaaattgct tgcctgctaa 1900  
 agtaaagat taaattgaca ttttcttact aaaaaaaaaa aaaaaaa 1947

<210> 185  
 <211> 501  
 <212> PRT  
 <213> Homo Sapien

<400> 185  
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 Phe Arg Ile Pro Leu Lys Glu Tyr Ser Phe Glu Lys Val Arg Glu  
 35 40 45  
 Glu Ser Ser Phe Ser Asp Ile Pro Asp Val Lys Asn Asp Phe Ala  
 50 55 60  
 Phe Leu Leu His Met Val Asp Gln Tyr Asp Gln Leu Tyr Ser Lys  
 65 70 75  
 Arg Phe Gly Val Phe Leu Ser Glu Val Ser Glu Asn Lys Leu Arg  
 80 85 90  
 Glu Ile Ser Leu Asn His Glu Trp Thr Phe Glu Lys Leu Arg Gln  
 95 100 105  
 His Ile Ser Arg Asn Ala Gln Asp Lys Gln Glu Leu His Leu Phe  
 110 115 120  
 Met Leu Ser Gly Val Pro Asp Ala Val Phe Asp Leu Thr Asp Leu  
 125 130 135  
 Asp Val Leu Lys Leu Glu Leu Ile Pro Glu Ala Lys Ile Pro Ala  
 140 145 150  
 Lys Ile Ser Gln Met Thr Asn Leu Gln Glu Leu His Leu Cys His  
 155 160 165  
 Cys Pro Ala Lys Val Glu Gln Thr Ala Phe Ser Phe Leu Arg Asp  
 170 175 180  
 His Leu Arg Cys Leu His Val Lys Phe Thr Asp Val Ala Glu Ile  
 185 190 195  
 Pro Ala Trp Val Tyr Leu Leu Lys Asn Leu Arg Glu Leu Tyr Leu  
 200 205 210

|                 |                     |                         |     |     |     |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Ile Gly Asn Leu | Asn Ser Glu Asn Asn | Lys Met Ile Gly Leu Glu | 215 | 220 | 225 |
| Ser Leu Arg Glu | Leu Arg His Leu Lys | Ile Leu His Val Lys Ser | 230 | 235 | 240 |
| Asn Leu Thr Lys | Val Pro Ser Asn Ile | Thr Asp Val Ala Pro His | 245 | 250 | 255 |
| Leu Thr Lys Leu | Val Ile His Asn Asp | Gly Thr Lys Leu Leu Val | 260 | 265 | 270 |
| Leu Asn Ser Leu | Lys Lys Met Met Asn | Val Ala Glu Leu Glu Leu | 275 | 280 | 285 |
| Gln Asn Cys Glu | Leu Glu Arg Ile Pro | His Ala Ile Phe Ser Leu | 290 | 295 | 300 |
| Ser Asn Leu Gln | Glu Leu Asp Leu Lys | Ser Asn Asn Ile Arg Thr | 305 | 310 | 315 |
| Ile Glu Glu Ile | Ile Ser Phe Gln His | Leu Lys Arg Leu Thr Cys | 320 | 325 | 330 |
| Leu Lys Leu Trp | His Asn Lys Ile Val | Thr Ile Pro Pro Ser Ile | 335 | 340 | 345 |
| Thr His Val Lys | Asn Leu Glu Ser Leu | Tyr Phe Ser Asn Asn Lys | 350 | 355 | 360 |
| Leu Glu Ser Leu | Pro Val Ala Val Phe | Ser Leu Gln Lys Leu Arg | 365 | 370 | 375 |
| Cys Leu Asp Val | Ser Tyr Asn Asn Ile | Ser Met Ile Pro Ile Glu | 380 | 385 | 390 |
| Ile Gly Leu Leu | Gln Asn Leu Gln His | Leu His Ile Thr Gly Asn | 395 | 400 | 405 |
| Lys Val Asp Ile | Leu Pro Lys Gln Leu | Phe Lys Cys Ile Lys Leu | 410 | 415 | 420 |
| Arg Thr Leu Asn | Leu Gly Gln Asn Cys | Ile Thr Ser Leu Pro Glu | 425 | 430 | 435 |
| Lys Val Gly Gln | Leu Ser Gln Leu Thr | Gln Leu Glu Leu Lys Gly | 440 | 445 | 450 |
| Asn Cys Leu Asp | Arg Leu Pro Ala Gln | Leu Gly Gln Cys Arg Met | 455 | 460 | 465 |
| Leu Lys Lys Ser | Gly Leu Val Val Glu | Asp His Leu Phe Asp Thr | 470 | 475 | 480 |
| Leu Pro Leu Glu | Val Lys Glu Ala Leu | Asn Gln Asp Ile Asn Ile | 485 | 490 | 495 |
| Pro Phe Ala Asn | Gly Ile             |                         | 500 |     |     |

<210> 186  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Oligonucleotide Probe

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 Ser Cys Thr Val Ser Leu Gly Gly Ala Asn Met Ala Glu Thr His  
 35 40 45  
 Lys Ala Met Ile Leu Gln Leu Asn Pro Ser Glu Asn Cys Thr Trp  
 50 55 60  
 Thr Ile Glu Arg Pro Glu Asn Lys Ser Ile Arg Ile Ile Phe Ser  
 65 70 75

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
| Tyr | Val | Gln | Leu | Asp | Pro | Asp | Gly | Ser | Cys | Glu | Ser | Glu | Asn | Ile |  |  |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |  |  |
| Lys | Val | Phe | Asp | Gly | Thr | Ser | Ser | Asn | Gly | Pro | Leu | Leu | Gly | Gln |  |  |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |  |  |
| Val | Cys | Ser | Lys | Asn | Asp | Tyr | Val | Pro | Val | Phe | Glu | Ser | Ser | Ser |  |  |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |  |  |
| Ser | Thr | Leu | Thr | Phe | Gln | Ile | Val | Thr | Asp | Ser | Ala | Arg | Ile | Gln |  |  |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |  |  |
| Arg | Thr | Val | Phe | Val | Phe | Tyr | Tyr | Phe | Phe | Ser | Pro | Asn | Ile | Ser |  |  |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |  |  |
| Ile | Pro | Asn | Cys | Gly | Gly | Tyr | Leu | Asp | Thr | Leu | Glu | Gly | Ser | Phe |  |  |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |  |  |
| Thr | Ser | Pro | Asn | Tyr | Pro | Lys | Pro | His | Pro | Glu | Leu | Ala | Tyr | Cys |  |  |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |  |  |
| Val | Trp | His | Ile | Gln | Val | Glu | Lys | Asp | Tyr | Lys | Ile | Lys | Leu | Asn |  |  |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |  |  |
| Phe | Lys | Glu | Ile | Phe | Leu | Glu | Ile | Asp | Lys | Gln | Cys | Lys | Phe | Asp |  |  |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |  |  |
| Phe | Leu | Ala | Ile | Tyr | Asp | Gly | Pro | Ser | Thr | Asn | Ser | Gly | Leu | Ile |  |  |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |  |  |
| Gly | Gln | Val | Cys | Gly | Arg | Val | Thr | Pro | Thr | Phe | Glu | Ser | Ser | Ser |  |  |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |  |  |
| Asn | Ser | Leu | Thr | Val | Val | Leu | Ser | Thr | Asp | Tyr | Ala | Asn | Ser | Tyr |  |  |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |  |  |
| Arg | Gly | Phe | Ser | Ala | Ser | Tyr | Thr | Ser | Ile | Tyr | Ala | Glu | Asn | Ile |  |  |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |  |  |
| Asn | Thr | Thr | Ser | Leu | Thr | Cys | Ser | Ser | Asp | Arg | Met | Arg | Val | Ile |  |  |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |  |  |
| Ile | Ser | Lys | Ser | Tyr | Leu | Glu | Ala | Phe | Asn | Ser | Asn | Gly | Asn | Asn |  |  |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |  |  |
| Leu | Gln | Leu | Lys | Asp | Pro | Thr | Cys | Arg | Pro | Lys | Leu | Ser | Asn | Val |  |  |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |  |  |
| Val | Glu | Phe | Ser | Val | Pro | Leu | Asn | Gly | Cys | Gly | Thr | Ile | Arg | Lys |  |  |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |  |  |
| Val | Glu | Asp | Gln | Ser | Ile | Thr | Tyr | Thr | Asn | Ile | Ile | Thr | Phe | Ser |  |  |  |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |  |  |  |
| Ala | Ser | Ser | Thr | Ser | Glu | Val | Ile | Thr | Arg | Gln | Lys | Gln | Leu | Gln |  |  |  |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |  |  |  |
| Ile | Ile | Val | Lys | Cys | Glu | Met | Gly | His | Asn | Ser | Thr | Val | Glu | Ile |  |  |  |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |  |  |  |

|                 |                     |                         |     |
|-----------------|---------------------|-------------------------|-----|
| Ile Tyr Ile Thr | Glu Asp Asp Val     | Ile Gln Ser Gln Asn Ala | Leu |
|                 | 380                 | 385                     | 390 |
| Gly Lys Tyr Asn | Thr Ser Met Ala     | Leu Phe Glu Ser Asn Ser | Phe |
|                 | 395                 | 400                     | 405 |
| Glu Lys Thr Ile | Leu Glu Ser Pro Tyr | Tyr Val Asp Leu Asn Gln |     |
|                 | 410                 | 415                     | 420 |
| Thr Leu Phe Val | Gln Val Ser Leu His | Thr Ser Asp Pro Asn     | Leu |
|                 | 425                 | 430                     | 435 |
| Val Val Phe Leu | Asp Thr Cys Arg Ala | Ser Pro Thr Ser Asp     | Phe |
|                 | 440                 | 445                     | 450 |
| Ala Ser Pro Thr | Tyr Asp Leu Ile Lys | Ser Gly Cys Ser Arg     | Asp |
|                 | 455                 | 460                     | 465 |
| Glu Thr Cys Lys | Val Tyr Pro Leu Phe | Gly His Tyr Gly Arg     | Phe |
|                 | 470                 | 475                     | 480 |
| Gln Phe Asn Ala | Phe Lys Phe Leu Arg | Ser Met Ser Ser Val     | Tyr |
|                 | 485                 | 490                     | 495 |
| Leu Gln Cys Lys | Val Leu Ile Cys Asp | Ser Ser Asp His Gln     | Ser |
|                 | 500                 | 505                     | 510 |
| Arg Cys Asn Gln | Gly Cys Val Ser Arg | Ser Lys Arg Asp Ile     | Ser |
|                 | 515                 | 520                     | 525 |
| Ser Tyr Lys Trp | Lys Thr Asp Ser Ile | Ile Gly Pro Ile Arg     | Leu |
|                 | 530                 | 535                     | 540 |
| Lys Arg Asp Arg | Ser Ala Ser Gly Asn | Ser Gly Phe Gln His     | Glu |
|                 | 545                 | 550                     | 555 |
| Thr His Ala Glu | Glu Thr Pro Asn Gln | Pro Phe Asn Ser Val     | His |
|                 | 560                 | 565                     | 570 |
| Leu Phe Ser Phe | Met Val Leu Ala Leu | Asn Val Val Thr Val     | Ala |
|                 | 575                 | 580                     | 585 |
| Thr Ile Thr Val | Arg His Phe Val Asn | Gln Arg Ala Asp Tyr     | Lys |
|                 | 590                 | 595                     | 600 |
| Tyr Gln Lys Leu | Gln Asn Tyr         |                         |     |
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<210> 195

<211> 467

<212> PRT

<213> Homo Sapien

<400> 195

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Pro | Gln | Glu | Leu | Pro | Arg | Leu | Ala | Phe | Pro | Leu | Leu | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Leu | Leu | Leu | Leu | Pro | Pro | Pro | Pro | Cys | Pro | Ala | His | Ser |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Thr | Arg | Phe | Asp | Pro | Thr | Trp | Glu | Ser | Leu | Asp | Ala | Arg | Gln |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Pro | Ala | Trp | Phe | Asp | Gln | Ala | Lys | Phe | Gly | Ile | Phe | Ile | His |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Gly | Val | Phe | Ser | Val | Pro | Ser | Phe | Gly | Ser | Glu | Trp | Phe | Trp |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Tyr | Trp | Gln | Lys | Glu | Lys | Ile | Pro | Lys | Tyr | Val | Glu | Phe | Met |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Asp | Asn | Tyr | Pro | Pro | Ser | Phe | Lys | Tyr | Glu | Asp | Phe | Gly | Pro |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Phe | Thr | Ala | Lys | Phe | Phe | Asn | Ala | Asn | Gln | Trp | Ala | Asp | Ile |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Gln | Ala | Ser | Gly | Ala | Lys | Tyr | Ile | Val | Leu | Thr | Ser | Lys | His |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Glu | Gly | Phe | Thr | Leu | Trp | Gly | Ser | Glu | Tyr | Ser | Trp | Asn | Trp |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ala | Ile | Asp | Glu | Gly | Pro | Lys | Arg | Asp | Ile | Val | Lys | Glu | Leu |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Val | Ala | Ile | Arg | Asn | Arg | Thr | Asp | Leu | Arg | Phe | Gly | Leu | Tyr |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Ser | Leu | Phe | Glu | Trp | Phe | His | Pro | Leu | Phe | Leu | Glu | Asp | Glu |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ser | Ser | Phe | His | Lys | Arg | Gln | Phe | Pro | Val | Ser | Lys | Thr | Leu |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Glu | Leu | Tyr | Glu | Leu | Val | Asn | Asn | Tyr | Gln | Pro | Glu | Val | Leu |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Ser | Asp | Gly | Asp | Gly | Gly | Ala | Pro | Asp | Gln | Tyr | Trp | Asn | Ser |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Gly | Phe | Leu | Ala | Trp | Leu | Tyr | Asn | Glu | Ser | Pro | Val | Arg | Gly | 245 | 250 | 255 |
| Thr | Val | Val | Thr | Asn | Asp | Arg | Trp | Gly | Ala | Gly | Ser | Ile | Cys | Lys | 260 | 265 | 270 |
| His | Gly | Gly | Phe | Tyr | Thr | Cys | Ser | Asp | Arg | Tyr | Asn | Pro | Gly | His | 275 | 280 | 285 |
| Leu | Leu | Pro | His | Lys | Trp | Glu | Asn | Cys | Met | Thr | Ile | Asp | Lys | Leu | 290 | 295 | 300 |
| Ser | Trp | Gly | Tyr | Arg | Arg | Glu | Ala | Gly | Ile | Ser | Asp | Tyr | Leu | Thr | 305 | 310 | 315 |
| Ile | Glu | Glu | Leu | Val | Lys | Gln | Leu | Val | Glu | Thr | Val | Ser | Cys | Gly | 320 | 325 | 330 |
| Gly | Asn | Leu | Leu | Met | Asn | Ile | Gly | Pro | Thr | Leu | Asp | Gly | Thr | Ile | 335 | 340 | 345 |
| Ser | Val | Val | Phe | Glu | Glu | Arg | Leu | Arg | Gln | Val | Gly | Ser | Trp | Leu | 350 | 355 | 360 |
| Lys | Val | Asn | Gly | Glu | Ala | Ile | Tyr | Glu | Thr | Tyr | Thr | Trp | Arg | Ser | 365 | 370 | 375 |
| Gln | Asn | Asp | Thr | Val | Thr | Pro | Asp | Val | Trp | Tyr | Thr | Ser | Lys | Pro | 380 | 385 | 390 |
| Lys | Glu | Lys | Leu | Val | Tyr | Ala | Ile | Phe | Leu | Lys | Trp | Pro | Thr | Ser | 395 | 400 | 405 |
| Gly | Gln | Leu | Phe | Leu | Gly | His | Pro | Lys | Ala | Ile | Leu | Gly | Ala | Thr | 410 | 415 | 420 |
| Glu | Val | Lys | Leu | Leu | Gly | His | Gly | Gln | Pro | Leu | Asn | Trp | Ile | Ser | 425 | 430 | 435 |
| Leu | Glu | Gln | Asn | Gly | Ile | Met | Val | Glu | Leu | Pro | Gln | Leu | Thr | Ile | 440 | 445 | 450 |
| His | Gln | Met | Pro | Cys | Lys | Trp | Gly | Trp | Ala | Leu | Ala | Leu | Thr | Asn | 455 | 460 | 465 |

Val Ile

<210> 196

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 196

tggtttgacc aggccaagtt cgg 23

<210> 197

<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Oligonucleotide Probe

<400> 197  
ggattcatcc tcaaggaaga gcgg 24

<210> 198  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Oligonucleotide Probe

<400> 198  
aacttgcagc atcagccact ctgc 24

<210> 199  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Oligonucleotide Probe

<400> 199  
ttccgtgccc agcttcggta gcgagtgggt ctggtggtat tggca 45

<210> 200  
<211> 2372  
<212> DNA  
<213> Homo Sapien

<400> 200  
agcagggaaa tccggatgtc tcggttatga agtggagcag tgagtgtgag 50  
cctcaacata gttccagaac tctccatccg gactagttat tgagcatctg 100  
cctctcatat caccagtggc catctgaggt gtttcctgg ctctgaaggg 150  
gtaggcacga tggccaggtg cttcagcctg gtgttgcttc tcacttccat 200  
ctggaccacg aggctcctgg tccaaggctc tttgcgtgca gaagagcttt 250  
ccatccaggt gtcatgcaga attatgggga tcacccttgt gagcaaaaag 300  
gcgaaccagc agctgaattt cacagaagct aaggaggcct gtaggctgct 350  
gggactaagt ttggccggca aggaccaagt tgaaacagcc ttgaaagcta 400  
gctttgaaac ttgcagctat ggctgggttg gagatggatt cgtgggtcatc 450  
tctaggatta gcccaaacc caagtgtggg aaaaatgggg tgggtgtcct 500  
gatttggaag gttccagtga gccgacagtt tgcagcctat tgttacaact 550

catctgatac ttggactaac tcgtgcatto cagaaattat caccaccaa 600  
gatcccatat tcaacactca aactgcaaca caaacaacag aatttattgt 650  
cagtgcacagt acctactcgg tggcatcccc ttactctaca atacctgccc 700  
ctactactac tcctcctgct ccagcttcca cttctattcc acggagaaaa 750  
aaattgattt gtgtcacaga agtttttatg gaaactagca ccatgtctac 800  
agaaactgaa ccatttgttg aaaataaagc agcattcaag aatgaagctg 850  
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aagaaaactg ataaaaaccc agaagagtcc aagagtccaa gcaaaaactac 1100  
cgtgcgatgc ctggaagctg aagtttagat gagacagaaa tgaggagaca 1150  
cacctgaggc tggtttcttt catgctcctt accctgcccc agctggggaa 1200  
atcaaaaggg ccaaagaacc aaagaagaaa gtccaccctt ggttcctaac 1250  
tggaatcagc tcaggactgc cattggacta tggagtgcac caaagagaat 1300  
gcccttctcc ttattgtaac cctgtctgga tcctatcttc ctacctcaa 1350  
agcttccac ggcttttcta gcctggctat gtccataata tatccactg 1400  
ggagaaagga gttttgcaaa gtgcaaggac ctaaaacatc tcatcagtat 1450  
ccagtggtaa aaaggcctcc tggctgtctg aggctaggtg ggttgaaagc 1500  
caaggagtca ctgagaccaa ggctttctct actgattccg cagctcagac 1550  
cctttcttca gctctgaaag agaaacacgt atcccacctg acatgtcctt 1600  
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ccatggagat tctcataact tgagacctaa tctctgtaaa gctaaaataa 1700  
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tattttctct aggaaatata cttttacaag taacaaaaat aaaaactctt 1900  
ataaatttct atttttatct gagttacaga aatgattact aaggaagatt 1950  
actcagtaat ttgtttaaaa agtaataaaa ttcaacaaac atttgctgaa 2000

tagctactat atgtcaagtg ctgtgcaagg tattacactc tgtaattgaa 2050  
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 ttttttcagt tttgatattt ctagcttata tacttccaaa ctaattttta 2150  
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 aaccttaatt tattattaac atacctaaga agtacattgt tacctctata 2250  
 taccaaagca catttttaaaa gtgccattaa caaatgtatc actagccctc 2300  
 ctttttccaa caagaaggga ctgagagatg cagaaatatt tgtgacaaaa 2350  
 aattaaagca tttagaaaac tt 2372

<210> 201  
 <211> 322  
 <212> PRT  
 <213> Homo Sapien

<400> 201  
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 Thr Thr Arg Leu Leu Val Gln Gly Ser Leu Arg Ala Glu Glu Leu  
 20 25 30  
 Ser Ile Gln Val Ser Cys Arg Ile Met Gly Ile Thr Leu Val Ser  
 35 40 45  
 Lys Lys Ala Asn Gln Gln Leu Asn Phe Thr Glu Ala Lys Glu Ala  
 50 55 60  
 Cys Arg Leu Leu Gly Leu Ser Leu Ala Gly Lys Asp Gln Val Glu  
 65 70 75  
 Thr Ala Leu Lys Ala Ser Phe Glu Thr Cys Ser Tyr Gly Trp Val  
 80 85 90  
 Gly Asp Gly Phe Val Val Ile Ser Arg Ile Ser Pro Asn Pro Lys  
 95 100 105  
 Cys Gly Lys Asn Gly Val Gly Val Leu Ile Trp Lys Val Pro Val  
 110 115 120  
 Ser Arg Gln Phe Ala Ala Tyr Cys Tyr Asn Ser Ser Asp Thr Trp  
 125 130 135  
 Thr Asn Ser Cys Ile Pro Glu Ile Ile Thr Thr Lys Asp Pro Ile  
 140 145 150  
 Phe Asn Thr Gln Thr Ala Thr Gln Thr Thr Glu Phe Ile Val Ser  
 155 160 165  
 Asp Ser Thr Tyr Ser Val Ala Ser Pro Tyr Ser Thr Ile Pro Ala  
 170 175 180  
 Pro Thr Thr Thr Pro Pro Ala Pro Ala Ser Thr Ser Ile Pro Arg  
 185 190 195

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Arg | Lys | Lys | Leu | Ile | Cys | Val | Thr | Glu | Val | Phe | Met | Glu | Thr | Ser |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Thr | Met | Ser | Thr | Glu | Thr | Glu | Pro | Phe | Val | Glu | Asn | Lys | Ala | Ala |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Phe | Lys | Asn | Glu | Ala | Ala | Gly | Phe | Gly | Gly | Val | Pro | Thr | Ala | Leu |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Leu | Val | Leu | Ala | Leu | Leu | Phe | Phe | Gly | Ala | Ala | Ala | Gly | Leu | Gly |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Phe | Cys | Tyr | Val | Lys | Arg | Tyr | Val | Lys | Ala | Phe | Pro | Phe | Thr | Asn |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Lys | Asn | Gln | Gln | Lys | Glu | Met | Ile | Glu | Thr | Lys | Val | Val | Lys | Glu |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Glu | Lys | Ala | Asn | Asp | Ser | Asn | Pro | Asn | Glu | Glu | Ser | Lys | Lys | Thr |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| Asp | Lys | Asn | Pro | Glu | Glu | Ser | Lys | Ser | Pro | Ser | Lys | Thr | Thr | Val |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |
| Arg | Cys | Leu | Glu | Ala | Glu | Val |     |     |     |     |     |     |     |     |  |
|     |     |     |     | 320 |     |     |     |     |     |     |     |     |     |     |  |

<210> 202  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 202  
 gagctttcca tccaggtgtc atgc 24

<210> 203  
 <211> 22  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 203  
 gtcagtgcaca gtacctactc gg 22

<210> 204  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 204

tggagcagga ggagtagtag tagg 24

<210> 205  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe  
 <400> 205  
 aggaggcctg taggctgctg ggactaagtt tggccggcaa ggaccaagtt 50

<210> 206  
 <211> 1620  
 <212> DNA  
 <213> Homo Sapien

<220>  
 <221> unsure  
 <222> 973, 977, 996, 1003  
 <223> unknown base

<400> 206  
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 ctttcacgat ggctcgccca accttactac cttctgtcgg ccctgctctc 100  
 tgctgccttc ctactcgtga ggaaactgcc gccgctctgc cacggctctgc 150  
 ccaccaacg cgaagacggt aaccctgtg actttgactg gagagaagtg 200  
 gagatcctga tgtttctcag tgccattgtg atgatgaaga accgcagatc 250  
 catcactgtg gagcaacata taggcaacat tttcatgttt agtaaagtgg 300  
 ccaacacaat tcttttcttc cgcttgata ttgcgatggg cctactttac 350  
 atcacactct gcatagtgtt cctgatgacg tgcaaaccac ccctatatat 400  
 gggccctgag tatatcaagt acttcaatga taaaaccatt gatgaggaac 450  
 tagaacggga caagagggtc acttggattg tggagttctt tgccaattgg 500  
 tctaattgact gccaatcatt tgcccctatc tatgctgacc tctcccttaa 550  
 atacaactgt acagggctaa attttgggaa ggtggatggt ggacgctata 600  
 ctgatgttag tacgcggtac aaagtgagca catcacccct caccaagcaa 650  
 ctccctaccc tgatcctgtt ccaaggtggc aaggaggcaa tgcggcggcc 700  
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 ctatcaaagg ctggagacaa tatccctgag gagcagcctg tggcttcaac 850  
 cccaccaca gtgtcagatg gggaaaacaa gaaggataaa taagatcctc 900



actttggcag tgcttcctct cctgtcaatt ccaggctctt tccataacca 950  
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ctaaggagaa acctttaacc acaaagtttt tatcattgaa gacaatattg 1450  
aacaaccccc tattttgtgg ggattgagaa ggggtgaata gaggcttgag 1500  
actttccttt gtgtggtagg acttgaggga gaaatcccct ggactttcac 1550  
taaccctctg acatactccc cacaccagc tgatggcttt ccgtaataaa 1600  
aagattggga tttccttttg 1620

<210> 207

<211> 296

<212> PRT

<213> Homo Sapien

<400> 207

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Val | Leu | Ala | Pro | Leu | Ile | Ala | Leu | Val | Tyr | Ser | Val | Pro |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Arg | Leu | Ser | Arg | Trp | Leu | Ala | Gln | Pro | Tyr | Tyr | Leu | Leu | Ser | Ala |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |
| Leu | Leu | Ser | Ala | Ala | Phe | Leu | Leu | Val | Arg | Lys | Leu | Pro | Pro | Leu |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |
| Cys | His | Gly | Leu | Pro | Thr | Gln | Arg | Glu | Asp | Gly | Asn | Pro | Cys | Asp |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |
| Phe | Asp | Trp | Arg | Glu | Val | Glu | Ile | Leu | Met | Phe | Leu | Ser | Ala | Ile |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |
| Val | Met | Met | Lys | Asn | Arg | Arg | Ser | Ile | Thr | Val | Glu | Gln | His | Ile |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |
| Gly | Asn | Ile | Phe | Met | Phe | Ser | Lys | Val | Ala | Asn | Thr | Ile | Leu | Phe |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| Phe | Arg | Leu | Asp | Ile | Arg | Met | Gly | Leu | Leu | Tyr | Ile | Thr | Leu | Cys |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |

|   |                         |     |     |     |
|---|-------------------------|-----|-----|-----|
| Ile Val Phe Leu Met Thr Cys Lys Pro     | Pro Leu Tyr Met Gly Pro | 125 | 130 | 135 |
| Glu Tyr Ile Lys Tyr Phe Asn Asp Lys Thr | Ile Asp Glu Glu Leu     | 140 | 145 | 150 |
| Glu Arg Asp Lys Arg Val Thr Trp Ile     | Val Glu Phe Phe Ala Asn | 155 | 160 | 165 |
| Trp Ser Asn Asp Cys Gln Ser Phe Ala     | Pro Ile Tyr Ala Asp Leu | 170 | 175 | 180 |
| Ser Leu Lys Tyr Asn Cys Thr Gly Leu     | Asn Phe Gly Lys Val Asp | 185 | 190 | 195 |
| Val Gly Arg Tyr Thr Asp Val Ser Thr     | Arg Tyr Lys Val Ser Thr | 200 | 205 | 210 |
| Ser Pro Leu Thr Lys Gln Leu Pro Thr     | Leu Ile Leu Phe Gln Gly | 215 | 220 | 225 |
| Gly Lys Glu Ala Met Arg Arg Pro Gln     | Ile Asp Lys Lys Gly Arg | 230 | 235 | 240 |
| Ala Val Ser Trp Thr Phe Ser Glu Glu     | Asn Val Ile Arg Glu Phe | 245 | 250 | 255 |
| Asn Leu Asn Glu Leu Tyr Gln Arg Ala     | Lys Lys Leu Ser Lys Ala | 260 | 265 | 270 |
| Gly Asp Asn Ile Pro Glu Glu Gln Pro     | Val Ala Ser Thr Pro Thr | 275 | 280 | 285 |
| Thr Val Ser Asp Gly Glu Asn Lys Lys     | Asp Lys                 | 290 | 295 |     |

<210> 208

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 208

gcttggatat tcgcatgggc ctac 24

<210> 209

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 209

tggagacaat atccctgagg 20

<210> 210

<211> 24

<212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic Oligonucleotide Probe  
  
 <400> 210  
 aacagttggc cacagcatgg cagg 24  
  
 <210> 211  
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 <213> Artificial Sequence  
  
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 <223> Synthetic Oligonucleotide Probe  
  
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 <210> 212  
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 <212> DNA  
 <213> Homo Sapien  
  
 <400> 212  
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 atgggcctgt tgctcctggt ccattgtctc ctgctgcccc gctcctacgg 150  
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 cctgccctgc cgctaccgct acgagccggc cctgggtctcc ccgcggcgtg 350  
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 ccgcgtgcac ctgcggcagg acaaagagca tgacgtctcg ctggagatcc 500  
 aggatctgcg gctggaggac tatgggcgtt accgctgtga ggtcattgac 550  
 gggctggagg atgaaagcgg tctggtggag ctggagctgc ggggtgtggt 600  
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 gccagcaggt ctgtgcagag caggctgcgg tgggtggcctc ctttgagcag 700  
 ctcttcgagg cctgggagga gggcctggac tggtgcaacg cgggctggct 750  
 gcaggatgct acggtgcagt accccatcat gttgccccgg cagccctgcg 800  
 gtggcccagg cctggcacct ggcgtgcgaa gctacggccc ccgccaccgc 850

cgctgcacc gctatgatgt attctgcttc gctactgccc tcaaggggcg 900  
 ggtgtactac ctggagcacc ctgagaagct gacgctgaca gaggcaaggg 950  
 aggccctgcca ggaagatgat gccacgatcg ccaaggtggg acagctcttt 1000  
 gccgcctgga agttccatgg cctggaccgc tgcgacgctg gctggctggc 1050  
 agatggcagc gtccgctacc ctgtggttca cccgcatact aactgtgggc 1100  
 cccagagacc tgggggtccga agctttggct tccccgacct gcagagccgc 1150  
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 ctttaaacad ttttttacta ttttttgtaa agcaaacaga acccaatgcc 1350  
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 gccatttgcg gttttgtggg cttctggagg gttccccgcc atccaggctg 1450  
 gtctccctcc ctttaaggagg ttggtgcca gagtgggcgg tggcctgtct 1500  
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 cagcctgggg gaagaagagg gcctcggggg cctccggagc tgggcttttg 1600  
 gcctctcttg cccacctcta cttctctgtg aagccgctga cccagctctg 1650  
 cccactgagg ggctagggct ggaagccagt tctaggcttc caggcgaaat 1700  
 ctgaggggaag gaagaaactc ccctccccgt tccccctccc ctctcggttc 1750  
 caaagaatct gttttgttgt catttgtttc tctgtttcc ctgtgtgggg 1800  
 aggggccctc aggtgtgtgt actttggaca ataaatggtg ctatgactgc 1850  
 cttccgcca aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1900  
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1950  
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 1985

<210> 213  
 <211> 360  
 <212> PRT  
 <213> Homo Sapien

<400> 213  
 Met Gly Leu Leu Leu Leu Val Pro Leu Leu Leu Leu Pro Gly Ser  
 1 5 10 15  
 Tyr Gly Leu Pro Phe Tyr Asn Gly Phe Tyr Tyr Ser Asn Ser Ala  
 20 25 30

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asn | Asp | Gln | Asn | Leu | Gly | Asn | Gly | His | Gly | Lys | Asp | Leu | Leu | Asn |  |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |  |
| Gly | Val | Lys | Leu | Val | Val | Glu | Thr | Pro | Glu | Glu | Thr | Leu | Phe | Thr |  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |  |
| Tyr | Gln | Gly | Ala | Ser | Val | Ile | Leu | Pro | Cys | Arg | Tyr | Arg | Tyr | Glu |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |  |
| Pro | Ala | Leu | Val | Ser | Pro | Arg | Arg | Val | Arg | Val | Lys | Trp | Trp | Lys |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Leu | Ser | Glu | Asn | Gly | Ala | Pro | Glu | Lys | Asp | Val | Leu | Val | Ala | Ile |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Gly | Leu | Arg | His | Arg | Ser | Phe | Gly | Asp | Tyr | Gln | Gly | Arg | Val | His |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Leu | Arg | Gln | Asp | Lys | Glu | His | Asp | Val | Ser | Leu | Glu | Ile | Gln | Asp |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Leu | Arg | Leu | Glu | Asp | Tyr | Gly | Arg | Tyr | Arg | Cys | Glu | Val | Ile | Asp |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Gly | Leu | Glu | Asp | Glu | Ser | Gly | Leu | Val | Glu | Leu | Glu | Leu | Arg | Gly |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Val | Val | Phe | Pro | Tyr | Gln | Ser | Pro | Asn | Gly | Arg | Tyr | Gln | Phe | Asn |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Phe | His | Glu | Gly | Gln | Gln | Val | Cys | Ala | Glu | Gln | Ala | Ala | Val | Val |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Ala | Ser | Phe | Glu | Gln | Leu | Phe | Arg | Ala | Trp | Glu | Glu | Gly | Leu | Asp |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Trp | Cys | Asn | Ala | Gly | Trp | Leu | Gln | Asp | Ala | Thr | Val | Gln | Tyr | Pro |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Ile | Met | Leu | Pro | Arg | Gln | Pro | Cys | Gly | Gly | Pro | Gly | Leu | Ala | Pro |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Gly | Val | Arg | Ser | Tyr | Gly | Pro | Arg | His | Arg | Arg | Leu | His | Arg | Tyr |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Asp | Val | Phe | Cys | Phe | Ala | Thr | Ala | Leu | Lys | Gly | Arg | Val | Tyr | Tyr |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Leu | Glu | His | Pro | Glu | Lys | Leu | Thr | Leu | Thr | Glu | Ala | Arg | Glu | Ala |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Cys | Gln | Glu | Asp | Asp | Ala | Thr | Ile | Ala | Lys | Val | Gly | Gln | Leu | Phe |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| Ala | Ala | Trp | Lys | Phe | His | Gly | Leu | Asp | Arg | Cys | Asp | Ala | Gly | Trp |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |
| Leu | Ala | Asp | Gly | Ser | Val | Arg | Tyr | Pro | Val | Val | His | Pro | His | Pro |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Cys | Gly | Pro | Pro | Glu | Pro | Gly | Val | Arg | Ser | Phe | Gly | Phe | Pro |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Pro | Gln | Ser | Arg | Leu | Tyr | Gly | Val | Tyr | Cys | Tyr | Arg | Gln | His |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |

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<210> 215

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<400> 215

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<210> 216

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<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 216

agggctggaa gccagttc 18

<210> 217

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 217

agccagtggag gaaatgag 18

<210> 218

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 218

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<220>  
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 <212> DNA  
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 tccccagacg caggccctca tggccagggg aggggtgcacc aggcggcccc 150  
 cctgagcgac gctccccatg atgacgcca cggaacttc cagtacgacc 200  
 atgaggcttt cctgggacgg gaagtggcca aggaattcga ccaactcacc 250  
 ccagaggaaa gccaggcccc tctggggcgg atcgtggacc gcatggaccg 300  
 cgcgggggac ggcgacggct ggggtgctgct ggccgagctt cgcgcggtga 350  
 tcgcgcacac gcagcagcgg cacatacggg actcgggtgag cgcggcctgg 400  
 gacacgtacg acacggaccg cgacgggcgt gtgggttggg aggagctgcg 450  
 caacgccacc tatggccact acgcgcccg tgaagaattt catgacgtgg 500  
 aggatgcaga gacctacaaa aagatgctgg ctcgggacga gcggcgtttc 550  
 cgggtggccg accaggatgg ggactcgatg gccactcgag aggagctgac 600  
 agccttcttg cccccgagg agttccctca catgcgggac atcgtgattg 650  
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 gaggagtaca tcgcggatct gtactcagcc gagcctgggg aggaggagcc 750  
 ggcgtgggtg cagacggaga ggcagcagtt ccgggacttc cgggatctga 800  
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 cctgccacgg accagcccct ggtggaagcc aaccacctgc tgcacgagag 900  
 cgacacggac aaggatgggc ggctgagcaa agcggaaatc ctgggtaatt 950  
 ggaacatgtt tgtgggcagt caggccacca actatggcga ggacctgacc 1000

cggcaccacg atgagctgtg agcaccgcgc acctgccaca gcctcagagg 1050  
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 ccaggccccg caggaggcag atgcagtccc aggcatacctc ctgcccctgg 1150  
 gctctcaggg accccctggg tcggcttctg tccctgtcac acccccaacc 1200  
 ccaggggagg gctgtcatag tcccagagga taagcaatac ctatttctga 1250  
 ctgagtctcc cagcccagac ccaggggaccc ttggccccaa gctcagctct 1300  
 aagaaccgcc ccaaccctc cagctccaaa tctgagcctc caccacatag 1350  
 actgaaactc ccctggcccc agccctctcc tgccctggcct ggccctgggac 1400  
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 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1500  
 aaa 1503

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 <211> 328  
 <212> PRT  
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<400> 221  
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 35 40 45  
 Asp Asp Ala His Gly Asn Phe Gln Tyr Asp His Glu Ala Phe Leu  
 50 55 60  
 Gly Arg Glu Val Ala Lys Glu Phe Asp Gln Leu Thr Pro Glu Glu  
 65 70 75  
 Ser Gln Ala Arg Leu Gly Arg Ile Val Asp Arg Met Asp Arg Ala  
 80 85 90  
 Gly Asp Gly Asp Gly Trp Val Ser Leu Ala Glu Leu Arg Ala Trp  
 95 100 105  
 Ile Ala His Thr Gln Gln Arg His Ile Arg Asp Ser Val Ser Ala  
 110 115 120  
 Ala Trp Asp Thr Tyr Asp Thr Asp Arg Asp Gly Arg Val Gly Trp  
 125 130 135  
 Glu Glu Leu Arg Asn Ala Thr Tyr Gly His Tyr Ala Pro Gly Glu  
 140 145 150  
 Glu Phe His Asp Val Glu Asp Ala Glu Thr Tyr Lys Lys Met Leu



| 155 |     |     |     |     | 160 |     |     |     |     | 165 |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Arg | Asp | Glu | Arg | Arg | Phe | Arg | Val | Ala | Asp | Gln | Asp | Gly | Asp |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |
| Ser | Met | Ala | Thr | Arg | Glu | Glu | Leu | Thr | Ala | Phe | Leu | His | Pro | Glu |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |
| Glu | Phe | Pro | His | Met | Arg | Asp | Ile | Val | Ile | Ala | Glu | Thr | Leu | Glu |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |
| Asp | Leu | Asp | Arg | Asn | Lys | Asp | Gly | Tyr | Val | Gln | Val | Glu | Glu | Tyr |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |
| Ile | Ala | Asp | Leu | Tyr | Ser | Ala | Glu | Pro | Gly | Glu | Glu | Glu | Pro | Ala |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Trp | Val | Gln | Thr | Glu | Arg | Gln | Gln | Phe | Arg | Asp | Phe | Arg | Asp | Leu |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |
| Asn | Lys | Asp | Gly | His | Leu | Asp | Gly | Ser | Glu | Val | Gly | His | Trp | Val |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |
| Leu | Pro | Pro | Ala | Gln | Asp | Gln | Pro | Leu | Val | Glu | Ala | Asn | His | Leu |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |
| Leu | His | Glu | Ser | Asp | Thr | Asp | Lys | Asp | Gly | Arg | Leu | Ser | Lys | Ala |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |
| Glu | Ile | Leu | Gly | Asn | Trp | Asn | Met | Phe | Val | Gly | Ser | Gln | Ala | Thr |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |
| Asn | Tyr | Gly | Glu | Asp | Leu | Thr | Arg | His | His | Asp | Glu | Leu |     |     |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     |     |

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<220>  
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<400> 222  
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<220>  
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<400> 223  
 gaaatcctgg gtaattgg 18

<210> 224  
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<223> Synthetic Oligonucleotide Probe

<400> 224

gtgcgcggtg ctcacagctc atc 23

<210> 225

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<400> 225

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<210> 226

<211> 2403

<212> DNA

<213> Homo Sapien

<400> 226

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tccctgtttc tttgtcgctc ccagcctgtc tgtcgctgtt ttggcgcccc 150

cgcctccccg cgggtgcgggg ttgcacaccg atcctgggct tcgctcgatt 200

tgccgcccag gcgcctccca gacctagagg ggcgctggcc tggagcagcg 250

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gcggggctct gaggaggtag cgcgcggggc ctcccgcacc ctggccttgc 350

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gggctgccct cttgaggaat tctctgtgta tgggaacata gtatatgctt 600

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 aattttgttg gaaaagtggc tctaattgtt ggaattggaa cagaaggacc 1000  
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 attgtattct cataatactg aaatgcttta gcatactaga atcagataca 2150  
 aaactattaa gtatgtcaac agccatttag gcaaataagc actcctttaa 2200  
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aaa 2403

<210> 227

<211> 550

<212> PRT

<213> Homo Sapien

<400> 227

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Ala | Ala | Trp | Ile | Pro | Ala | Leu | Gly | Leu | Gly | Val | Cys | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Leu | Pro | Gly | Pro | Ala | Gly | Ser | Glu | Gly | Ala | Ala | Pro | Ile |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ile | Thr | Cys | Phe | Thr | Arg | Gly | Leu | Asp | Ile | Arg | Lys | Glu | Lys |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Asp | Val | Leu | Cys | Pro | Gly | Gly | Cys | Pro | Leu | Glu | Glu | Phe | Ser |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Tyr | Gly | Asn | Ile | Val | Tyr | Ala | Ser | Val | Ser | Ser | Ile | Cys | Gly |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | Val | His | Arg | Gly | Val | Ile | Ser | Asn | Ser | Gly | Gly | Pro | Val |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Val | Tyr | Ser | Leu | Pro | Gly | Arg | Glu | Asn | Tyr | Ser | Ser | Val | Asp |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Asn | Gly | Ile | Gln | Ser | Gln | Met | Leu | Ser | Arg | Trp | Ser | Ala | Ser |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Thr | Val | Thr | Lys | Gly | Lys | Ser | Ser | Thr | Gln | Glu | Ala | Thr | Gly |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Ala | Val | Ser | Thr | Ala | His | Pro | Pro | Thr | Gly | Lys | Arg | Leu | Lys |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Thr | Pro | Glu | Lys | Lys | Thr | Gly | Asn | Lys | Asp | Cys | Lys | Ala | Asp |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ala | Phe | Leu | Ile | Asp | Gly | Ser | Phe | Asn | Ile | Gly | Gln | Arg | Arg |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Asn | Leu | Gln | Lys | Asn | Phe | Val | Gly | Lys | Val | Ala | Leu | Met | Leu |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ile | Gly | Thr | Glu | Gly | Pro | His | Val | Gly | Leu | Val | Gln | Ala | Ser |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | His | Pro | Lys | Ile | Glu | Phe | Tyr | Leu | Lys | Asn | Phe | Thr | Ser | Ala |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Asp | Val | Leu | Phe | Ala | Ile | Lys | Glu | Val | Gly | Phe | Arg | Gly | Gly |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ser | Asn | Thr | Gly | Lys | Ala | Leu | Lys | His | Thr | Ala | Gln | Lys | Phe |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |

|                 |                         |                         |     |     |     |
|-----------------|-------------------------|-------------------------|-----|-----|-----|
| Phe Thr Val Asp | Ala Gly Val Arg Lys     | Gly Ile Pro Lys Val Val | 260 | 265 | 270 |
| Val Val Phe Ile | Asp Gly Trp Pro Ser     | Asp Asp Ile Glu Glu Ala | 275 | 280 | 285 |
| Gly Ile Val Ala | Arg Glu Phe Gly Val     | Asn Val Phe Ile Val Ser | 290 | 295 | 300 |
| Val Ala Lys Pro | Ile Pro Glu Glu Leu     | Gly Met Val Gln Asp Val | 305 | 310 | 315 |
| Thr Phe Val Asp | Lys Ala Val Cys Arg     | Asn Asn Gly Phe Phe Ser | 320 | 325 | 330 |
| Tyr His Met Pro | Asn Trp Phe Gly Thr     | Thr Lys Tyr Val Lys Pro | 335 | 340 | 345 |
| Leu Val Gln Lys | Leu Cys Thr His Glu     | Gln Met Met Cys Ser Lys | 350 | 355 | 360 |
| Thr Cys Tyr Asn | Ser Val Asn Ile Ala     | Phe Leu Ile Asp Gly Ser | 365 | 370 | 375 |
| Ser Ser Val Gly | Asp Ser Asn Phe Arg     | Leu Met Leu Glu Phe Val | 380 | 385 | 390 |
| Ser Asn Ile Ala | Lys Thr Phe Glu Ile     | Ser Asp Ile Gly Ala Lys | 395 | 400 | 405 |
| Ile Ala Ala Val | Gln Phe Thr Tyr Asp     | Gln Arg Thr Glu Phe Ser | 410 | 415 | 420 |
| Phe Thr Asp Tyr | Ser Thr Lys Glu Asn     | Val Leu Ala Val Ile Arg | 425 | 430 | 435 |
| Asn Ile Arg Tyr | Met Ser Gly Gly Thr     | Ala Thr Gly Asp Ala Ile | 440 | 445 | 450 |
| Ser Phe Thr Val | Arg Asn Val Phe Gly     | Pro Ile Arg Glu Ser Pro | 455 | 460 | 465 |
| Asn Lys Asn Phe | Leu Val Ile Val Thr     | Asp Gly Gln Ser Tyr Asp | 470 | 475 | 480 |
| Asp Val Gln Gly | Pro Ala Ala Ala Ala     | His Asp Ala Gly Ile Thr | 485 | 490 | 495 |
| Ile Phe Ser Val | Gly Val Ala Trp Ala     | Pro Leu Asp Asp Leu Lys | 500 | 505 | 510 |
| Asp Met Ala Ser | Lys Pro Lys Glu Ser     | His Ala Phe Phe Thr Arg | 515 | 520 | 525 |
| Glu Phe Thr Gly | Leu Glu Pro Ile Val     | Ser Asp Val Ile Arg Gly | 530 | 535 | 540 |
| Ile Cys Arg Asp | Phe Leu Glu Ser Gln Gln |                         |     |     |     |

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<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Oligonucleotide Probe

<400> 228  
tggtctcgca caccgatc 18

<210> 229  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Oligonucleotide Probe

<400> 229  
ctgctgtcca caggggag 18

<210> 230  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Oligonucleotide Probe

<400> 230  
ccttgaagca tactgctc 18

<210> 231  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Oligonucleotide Probe

<400> 231  
gagatagcaa tttccgcc 18

<210> 232  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Oligonucleotide Probe

<400> 232  
ttcctcaaga gggcagcc 18

<210> 233  
<211> 24

<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Oligonucleotide Probe

<400> 233  
cttggcacca atgtccgaga ttcc 24

<210> 234  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Oligonucleotide Probe

<400> 234  
gctctgagga aggtgacgcg cggggcctcc gaacccttgg ccttg 45

<210> 235  
<211> 2586  
<212> DNA  
<213> Homo Sapien

<400> 235  
cgccgcgctc ccgcacccgc ggcccgccca ccgcgccgct cccgcatctg 50  
caccgcgagc ccggcggcct cccggcggga gcgagcagat ccagtccggc 100  
ccgcagcgca actcgggtcca gtcggggcgg cggctgcggg cgcagagcgg 150  
agatgcagcg gcttggggcc accctgctgt gcctgctgct ggcggcggcg 200  
gtccccacgg cccccgcgcc cgctccgacg gcgacctcgg ctccagtcaa 250  
gccccggccc gctctcagct acccgcagga ggaggccacc ctcaatgaga 300  
tgttccgcga gggtgaggaa ctgatggagg acacgcagca caaattgcgc 350  
agcgcggttg aagagatgga ggcagaagaa gctgctgcta aagcatcatc 400  
agaagtgaac ctggcaaact tacctcccag ctatcacaat gagaccaaca 450  
cagacacgaa gggttgaaat aataccatcc atgtgcaccg agaaattcac 500  
aagataacca acaaccagac tggacaaatg gtcttttcag agacagttat 550  
cacatctgtg ggagacgaag aaggcagaag gagccacgag tgcacatcgc 600  
acgaggactg tgggcccagc atgtactgcc agtttgccag cttccagtac 650  
acctgccagc catgccgggg ccagaggatg ctctgcaccc gggacagtga 700  
gtgctgtgga gaccagctgt gtgtctgggg tcaactgcacc aaaatggcca 750  
ccagggggcag caatgggacc atctgtgaca accagagggga ctgccagccg 800  
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acctcatcac ctgggagcta gagcctgatg gagccttgga ccgatgccct 950  
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catcttcttc ccagtaagtt tcccctctgg cttgacagca tgagggtgtg 1350  
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tgcaaacatc aacctggcaa aaatgcaaca aatgaatttt ccacgcagtt 1650  
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tctctcagca cagcctgggg aggggggtcat tgttctcctc gtccatcagg 1850  
gatctcagag gctcagagac tgcaagctgc ttgcccagt cacacagcta 1900  
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gaaggagaat gggatttttc ttgaggcatg cacatctgga attaaggtca 2050  
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cactgtccct ctttggcagt tgcattagta actttgaaag gtatatgact 2200  
gagcgtagca tacagggttaa cctgcagaaa cagtacttag gtaattgtag 2250  
ggcgaggatt ataaatgaaa tttgcaaaat cacttagcag caactgaaga 2300  
caattatcaa ccacgtggag aaaatcaaac cgagcagggc tgtgtgaaac 2350



atggttgtaa tatgcgactg cgaacactga actctacgcc actccacaaa 2400  
 tgatgttttc aggtgtcatg gactgttgcc accatgtatt catccagagt 2450  
 tcttaaagtt taaagttgca catgattgta taagcatgct ttctttgagt 2500  
 tttaaattat gtataaacat aagttgcatt tagaaatcaa gcataaatca 2550  
 cttcaactgc aaaaaaaaaa aaaaaaaaaa aaaaaa 2586

<210> 236

<211> 350

<212> PRT

<213> Homo Sapien

<400> 236

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Gln | Arg | Leu | Gly | Ala | Thr | Leu | Leu | Cys | Leu | Leu | Leu | Ala | Ala | 1   | 5   | 10  | 15 |
| Ala | Val | Pro | Thr | Ala | Pro | Ala | Pro | Ala | Pro | Thr | Ala | Thr | Ser | Ala | 20  | 25  | 30  |    |
| Pro | Val | Lys | Pro | Gly | Pro | Ala | Leu | Ser | Tyr | Pro | Gln | Glu | Glu | Ala | 35  | 40  | 45  |    |
| Thr | Leu | Asn | Glu | Met | Phe | Arg | Glu | Val | Glu | Glu | Leu | Met | Glu | Asp | 50  | 55  | 60  |    |
| Thr | Gln | His | Lys | Leu | Arg | Ser | Ala | Val | Glu | Glu | Met | Glu | Ala | Glu | 65  | 70  | 75  |    |
| Glu | Ala | Ala | Ala | Lys | Ala | Ser | Ser | Glu | Val | Asn | Leu | Ala | Asn | Leu | 80  | 85  | 90  |    |
| Pro | Pro | Ser | Tyr | His | Asn | Glu | Thr | Asn | Thr | Asp | Thr | Lys | Val | Gly | 95  | 100 | 105 |    |
| Asn | Asn | Thr | Ile | His | Val | His | Arg | Glu | Ile | His | Lys | Ile | Thr | Asn | 110 | 115 | 120 |    |
| Asn | Gln | Thr | Gly | Gln | Met | Val | Phe | Ser | Glu | Thr | Val | Ile | Thr | Ser | 125 | 130 | 135 |    |
| Val | Gly | Asp | Glu | Glu | Gly | Arg | Arg | Ser | His | Glu | Cys | Ile | Ile | Asp | 140 | 145 | 150 |    |
| Glu | Asp | Cys | Gly | Pro | Ser | Met | Tyr | Cys | Gln | Phe | Ala | Ser | Phe | Gln | 155 | 160 | 165 |    |
| Tyr | Thr | Cys | Gln | Pro | Cys | Arg | Gly | Gln | Arg | Met | Leu | Cys | Thr | Arg | 170 | 175 | 180 |    |
| Asp | Ser | Glu | Cys | Cys | Gly | Asp | Gln | Leu | Cys | Val | Trp | Gly | His | Cys | 185 | 190 | 195 |    |
| Thr | Lys | Met | Ala | Thr | Arg | Gly | Ser | Asn | Gly | Thr | Ile | Cys | Asp | Asn | 200 | 205 | 210 |    |

|                 |                     |                         |     |     |     |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Gln Arg Asp Cys | Gln Pro Gly Leu Cys | Cys Ala Phe Gln Arg Gly | 215 | 220 | 225 |
| Leu Leu Phe Pro | Val Cys Thr Pro Leu | Pro Val Glu Gly Glu Leu | 230 | 235 | 240 |
| Cys His Asp Pro | Ala Ser Arg Leu Leu | Asp Leu Ile Thr Trp Glu | 245 | 250 | 255 |
| Leu Glu Pro Asp | Gly Ala Leu Asp Arg | Cys Pro Cys Ala Ser Gly | 260 | 265 | 270 |
| Leu Leu Cys Gln | Pro His Ser His Ser | Leu Val Tyr Val Cys Lys | 275 | 280 | 285 |
| Pro Thr Phe Val | Gly Ser Arg Asp Gln | Asp Gly Glu Ile Leu Leu | 290 | 295 | 300 |
| Pro Arg Glu Val | Pro Asp Glu Tyr Glu | Val Gly Ser Phe Met Glu | 305 | 310 | 315 |
| Glu Val Arg Gln | Glu Leu Glu Asp Leu | Glu Arg Ser Leu Thr Glu | 320 | 325 | 330 |
| Glu Met Ala Leu | Gly Glu Pro Ala Ala | Ala Ala Ala Ala Leu Leu | 335 | 340 | 345 |
| Gly Gly Glu Glu | Ile                 |                         | 350 |     |     |

<210> 237  
 <211> 17  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 237  
 ggagctgcac cccttgc 17

<210> 238  
 <211> 49  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 238  
 ggaggactgt gccaccatga gagactcttc aaaccaagg caaaattgg 49

<210> 239  
 <211> 24  
 <212> DNA  
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<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 239  
 gcagagcgga gatgcagcgg cttg 24

<210> 240  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 240  
 ttggcagctt catggagg 18

<210> 241  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 241  
 cctgggcaaa aatgcaac 18

<210> 242  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 242  
 ctccagctcc tggcgcacct cctc 24

<210> 243  
 <211> 45  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 243  
 ggctctcagc taccgcgcag gagcgaggcc accctcaatg agatg 45

<210> 244  
 <211> 3679  
 <212> DNA  
 <213> Homo Sapien

<400> 244  
 aaggaggctg ggaggaaaga ggtaagaaag gttagagaac ctacctcaca 50  
 tctctctggg ctcagaagga ctctgaagat aacaataatt tcagcccatc 100  
 cactctcctt ccttcccaaa cacacatgtg catgtacaca cacacatata 150

cacacataca ccttcctctc cttcactgaa gactcacagt cactcactct 200  
gtgagcaggt catagaaaag gacactaaag ccttaaggac aggcctggcc 250  
attacctctg cagctccttt ggcttggtga gtcaaaaaac atgggagggg 300  
ccaggcacgg tgactcacac ctgtaatccc agcatttttg gagaccgagg 350  
tgagcagatc acttgaggtc aggagttcga gaccagcctg gccaacatgg 400  
agaaaccccc atctctacta aaaatacaaa aattagccag gagtgggtggc 450  
aggtagcctgt aatcccagct actcagggtg ctgagccagg agaatcgctt 500  
gaatccagga ggcgaggat gcagtcagct gagtgcaccg ctgcactcca 550  
gcctgggtga cagaatgaga ctctgtctca aacaaacaaa cacgggagga 600  
ggggtagata ctgcttctct gcaacctcct taactctgca tcctcttctt 650  
ccagggtgct cctgatggg gcctggcaat gactgagcag gccagcccc 700  
agaggacaag gaagagaagg catattgagg agggcaagaa gtgacgccc 750  
gtgtagaatg actgccctgg gaggggtggt ccttgggccc tggcaggggt 800  
gctgaccctt accctgcaaa acacaaagag caggactcca gactctcctt 850  
gtgaatggtc cctgccctg cagctccacc atgaggcttc tcgtggcccc 900  
actcttgcta gcttgggtgg ctggtgccac tgccactgtg cccgtggtac 950  
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gccagcctac aggaactcta tctcaaccac aaccagctct accgcatcgc 1350  
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ccaacctcct gagggccatt gacagccgct ggtttgaaat gctgccaac 1450  
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gaacttccgg cccctggcca acctgcgtag cctggtgcta gcaggcatga 1550  
acctgcggga gatctccgac tatgccctgg aggggctgca aagcctggag 1600  
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 ctgccaggaa agggacatgg acccacgtgc ttgaggcctg gcagctgggc 3150

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 atgtgtcacc tccccaacc cgattcactc ttttctcctg ttttgtaaaa 3650  
 aataaaaata aataataaca ataaaaaaa 3679

<210> 245  
 <211> 713  
 <212> PRT  
 <213> Homo Sapien

<400> 245  
 Met Arg Leu Leu Val Ala Pro Leu Leu Leu Ala Trp Val Ala Gly  
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 Ala Thr Ala Thr Val Pro Val Val Pro Trp His Val Pro Cys Pro  
 20 25 30  
 Pro Gln Cys Ala Cys Gln Ile Arg Pro Trp Tyr Thr Pro Arg Ser  
 35 40 45  
 Ser Tyr Arg Glu Ala Thr Thr Val Asp Cys Asn Asp Leu Phe Leu  
 50 55 60  
 Thr Ala Val Pro Pro Ala Leu Pro Ala Gly Thr Gln Thr Leu Leu  
 65 70 75  
 Leu Gln Ser Asn Ser Ile Val Arg Val Asp Gln Ser Glu Leu Gly  
 80 85 90  
 Tyr Leu Ala Asn Leu Thr Glu Leu Asp Leu Ser Gln Asn Ser Phe  
 95 100 105  
 Ser Asp Ala Arg Asp Cys Asp Phe His Ala Leu Pro Gln Leu Leu  
 110 115 120  
 Ser Leu His Leu Glu Glu Asn Gln Leu Thr Arg Leu Glu Asp His  
 125 130 135  
 Ser Phe Ala Gly Leu Ala Ser Leu Gln Glu Leu Tyr Leu Asn His  
 140 145 150  
 Asn Gln Leu Tyr Arg Ile Ala Pro Arg Ala Phe Ser Gly Leu Ser

| 155 |     |     |     |     | 160 |     |     |     |     | 165 |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Leu | Leu | Arg | Leu | His | Leu | Asn | Ser | Asn | Leu | Leu | Arg | Ala | Ile |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |
| Asp | Ser | Arg | Trp | Phe | Glu | Met | Leu | Pro | Asn | Leu | Glu | Ile | Leu | Met |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |
| Ile | Gly | Gly | Asn | Lys | Val | Asp | Ala | Ile | Leu | Asp | Met | Asn | Phe | Arg |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |
| Pro | Leu | Ala | Asn | Leu | Arg | Ser | Leu | Val | Leu | Ala | Gly | Met | Asn | Leu |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |
| Arg | Glu | Ile | Ser | Asp | Tyr | Ala | Leu | Glu | Gly | Leu | Gln | Ser | Leu | Glu |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Ser | Leu | Ser | Phe | Tyr | Asp | Asn | Gln | Leu | Ala | Arg | Val | Pro | Arg | Arg |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |
| Ala | Leu | Glu | Gln | Val | Pro | Gly | Leu | Lys | Phe | Leu | Asp | Leu | Asn | Lys |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |
| Asn | Pro | Leu | Gln | Arg | Val | Gly | Pro | Gly | Asp | Phe | Ala | Asn | Met | Leu |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |
| His | Leu | Lys | Glu | Leu | Gly | Leu | Asn | Asn | Met | Glu | Glu | Leu | Val | Ser |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |
| Ile | Asp | Lys | Phe | Ala | Leu | Val | Asn | Leu | Pro | Glu | Leu | Thr | Lys | Leu |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |
| Asp | Ile | Thr | Asn | Asn | Pro | Arg | Leu | Ser | Phe | Ile | His | Pro | Arg | Ala |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |
| Phe | His | His | Leu | Pro | Gln | Met | Glu | Thr | Leu | Met | Leu | Asn | Asn | Asn |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |
| Ala | Leu | Ser | Ala | Leu | His | Gln | Gln | Thr | Val | Glu | Ser | Leu | Pro | Asn |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |
| Leu | Gln | Glu | Val | Gly | Leu | His | Gly | Asn | Pro | Ile | Arg | Cys | Asp | Cys |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |
| Val | Ile | Arg | Trp | Ala | Asn | Ala | Thr | Gly | Thr | Arg | Val | Arg | Phe | Ile |
|     |     |     |     | 380 |     |     |     |     | 385 |     |     |     |     | 390 |
| Glu | Pro | Gln | Ser | Thr | Leu | Cys | Ala | Glu | Pro | Pro | Asp | Leu | Gln | Arg |
|     |     |     |     | 395 |     |     |     |     | 400 |     |     |     |     | 405 |
| Leu | Pro | Val | Arg | Glu | Val | Pro | Phe | Arg | Glu | Met | Thr | Asp | His | Cys |
|     |     |     |     | 410 |     |     |     |     | 415 |     |     |     |     | 420 |
| Leu | Pro | Leu | Ile | Ser | Pro | Arg | Ser | Phe | Pro | Pro | Ser | Leu | Gln | Val |
|     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |     | 435 |
| Ala | Ser | Gly | Glu | Ser | Met | Val | Leu | His | Cys | Arg | Ala | Leu | Ala | Glu |
|     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     | 450 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Pro | Glu | Pro | Glu | Ile | Tyr | Trp | Val | Thr | Pro | Ala | Gly | Leu | Arg | Leu |  | 455 | 460 | 465 |
| Thr | Pro | Ala | His | Ala | Gly | Arg | Arg | Tyr | Arg | Val | Tyr | Pro | Glu | Gly |  | 470 | 475 | 480 |
| Thr | Leu | Glu | Leu | Arg | Arg | Val | Thr | Ala | Glu | Glu | Ala | Gly | Leu | Tyr |  | 485 | 490 | 495 |
| Thr | Cys | Val | Ala | Gln | Asn | Leu | Val | Gly | Ala | Asp | Thr | Lys | Thr | Val |  | 500 | 505 | 510 |
| Ser | Val | Val | Val | Gly | Arg | Ala | Leu | Leu | Gln | Pro | Gly | Arg | Asp | Glu |  | 515 | 520 | 525 |
| Gly | Gln | Gly | Leu | Glu | Leu | Arg | Val | Gln | Glu | Thr | His | Pro | Tyr | His |  | 530 | 535 | 540 |
| Ile | Leu | Leu | Ser | Trp | Val | Thr | Pro | Pro | Asn | Thr | Val | Ser | Thr | Asn |  | 545 | 550 | 555 |
| Leu | Thr | Trp | Ser | Ser | Ala | Ser | Ser | Leu | Arg | Gly | Gln | Gly | Ala | Thr |  | 560 | 565 | 570 |
| Ala | Leu | Ala | Arg | Leu | Pro | Arg | Gly | Thr | His | Ser | Tyr | Asn | Ile | Thr |  | 575 | 580 | 585 |
| Arg | Leu | Leu | Gln | Ala | Thr | Glu | Tyr | Trp | Ala | Cys | Leu | Gln | Val | Ala |  | 590 | 595 | 600 |
| Phe | Ala | Asp | Ala | His | Thr | Gln | Leu | Ala | Cys | Val | Trp | Ala | Arg | Thr |  | 605 | 610 | 615 |
| Lys | Glu | Ala | Thr | Ser | Cys | His | Arg | Ala | Leu | Gly | Asp | Arg | Pro | Gly |  | 620 | 625 | 630 |
| Leu | Ile | Ala | Ile | Leu | Ala | Leu | Ala | Val | Leu | Leu | Leu | Ala | Ala | Gly |  | 635 | 640 | 645 |
| Leu | Ala | Ala | His | Leu | Gly | Thr | Gly | Gln | Pro | Arg | Lys | Gly | Val | Gly |  | 650 | 655 | 660 |
| Gly | Arg | Arg | Pro | Leu | Pro | Pro | Ala | Trp | Ala | Phe | Trp | Gly | Trp | Ser |  | 665 | 670 | 675 |
| Ala | Pro | Ser | Val | Arg | Val | Val | Ser | Ala | Pro | Leu | Val | Leu | Pro | Trp |  | 680 | 685 | 690 |
| Asn | Pro | Gly | Arg | Lys | Leu | Pro | Arg | Ser | Ser | Glu | Gly | Glu | Thr | Leu |  | 695 | 700 | 705 |
| Leu | Pro | Pro | Leu | Ser | Gln | Asn | Ser |     |     |     |     |     |     |     |  | 710 |     |     |

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<211> 546

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<213> Homo Sapien

<400> 250

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| Met | Arg | Gln | Thr | Ile | Ile | Lys | Val | Ile | Lys | Phe | Ile | Leu | Ile | Ile |  | 1   | 5   | 10  | 15 |
| Cys | Tyr | Thr | Val | Tyr | Tyr | Val | His | Asn | Ile | Lys | Phe | Asp | Val | Asp |  | 20  | 25  | 30  |    |
| Cys | Thr | Val | Asp | Ile | Glu | Ser | Leu | Thr | Gly | Tyr | Arg | Thr | Tyr | Arg |  | 35  | 40  | 45  |    |
| Cys | Ala | His | Pro | Leu | Ala | Thr | Leu | Phe | Lys | Ile | Leu | Ala | Ser | Phe |  | 50  | 55  | 60  |    |
| Tyr | Ile | Ser | Leu | Val | Ile | Phe | Tyr | Gly | Leu | Ile | Cys | Met | Tyr | Thr |  | 65  | 70  | 75  |    |
| Leu | Trp | Trp | Met | Leu | Arg | Arg | Ser | Leu | Lys | Lys | Tyr | Ser | Phe | Glu |  | 80  | 85  | 90  |    |
| Ser | Ile | Arg | Glu | Glu | Ser | Ser | Tyr | Ser | Asp | Ile | Pro | Asp | Val | Lys |  | 95  | 100 | 105 |    |
| Asn | Asp | Phe | Ala | Phe | Met | Leu | His | Leu | Ile | Asp | Gln | Tyr | Asp | Pro |  | 110 | 115 | 120 |    |
| Leu | Tyr | Ser | Lys | Arg | Phe | Ala | Val | Phe | Leu | Ser | Glu | Val | Ser | Glu |  | 125 | 130 | 135 |    |
| Asn | Lys | Leu | Arg | Gln | Leu | Asn | Leu | Asn | Asn | Glu | Trp | Thr | Leu | Asp |  | 140 | 145 | 150 |    |
| Lys | Leu | Arg | Gln | Arg | Leu | Thr | Lys | Asn | Ala | Gln | Asp | Lys | Leu | Glu |  | 155 | 160 | 165 |    |
| Leu | His | Leu | Phe | Met | Leu | Ser | Gly | Ile | Pro | Asp | Thr | Val | Phe | Asp |  | 170 | 175 | 180 |    |
| Leu | Val | Glu | Leu | Glu | Val | Leu | Lys | Leu | Glu | Leu | Ile | Pro | Asp | Val |  | 185 | 190 | 195 |    |
| Thr | Ile | Pro | Pro | Ser | Ile | Ala | Gln | Leu | Thr | Gly | Leu | Lys | Glu | Leu |  | 200 | 205 | 210 |    |
| Trp | Leu | Tyr | His | Thr | Ala | Ala | Lys | Ile | Glu | Ala | Pro | Ala | Leu | Ala |  | 215 | 220 | 225 |    |
| Phe | Leu | Arg | Glu | Asn | Leu | Arg | Ala | Leu | His | Ile | Lys | Phe | Thr | Asp |  | 230 | 235 | 240 |    |
| Ile | Lys | Glu | Ile | Pro | Leu | Trp | Ile | Tyr | Ser | Leu | Lys | Thr | Leu | Glu |  | 245 | 250 | 255 |    |
| Glu | Leu | His | Leu | Thr | Gly | Asn | Leu | Ser | Ala | Glu | Asn | Asn | Arg | Tyr |  | 260 | 265 | 270 |    |
| Ile | Val | Ile | Asp | Gly | Leu | Arg | Glu | Leu | Lys | Arg | Leu | Lys | Val | Leu |  | 275 | 280 | 285 |    |
| Arg | Leu | Lys | Ser | Asn | Leu | Ser | Lys | Leu | Pro | Gln | Val | Val | Thr | Asp |  | 290 | 295 | 300 |    |

|                 |                     |                         |
|-----------------|---------------------|-------------------------|
| Val Gly Val His | Leu Gln Lys Leu Ser | Ile Asn Asn Glu Gly Thr |
| 305             | 310                 | 315                     |
| Lys Leu Ile Val | Leu Asn Ser Leu Lys | Lys Met Ala Asn Leu Thr |
| 320             | 325                 | 330                     |
| Glu Leu Glu Leu | Ile Arg Cys Asp Leu | Glu Arg Ile Pro His Ser |
| 335             | 340                 | 345                     |
| Ile Phe Ser Leu | His Asn Leu Gln Glu | Ile Asp Leu Lys Asp Asn |
| 350             | 355                 | 360                     |
| Asn Leu Lys Thr | Ile Glu Glu Ile Ile | Ser Phe Gln His Leu His |
| 365             | 370                 | 375                     |
| Arg Leu Thr Cys | Leu Lys Leu Trp Tyr | Asn His Ile Ala Tyr Ile |
| 380             | 385                 | 390                     |
| Pro Ile Gln Ile | Gly Asn Leu Thr Asn | Leu Glu Arg Leu Tyr Leu |
| 395             | 400                 | 405                     |
| Asn Arg Asn Lys | Ile Glu Lys Ile Pro | Thr Gln Leu Phe Tyr Cys |
| 410             | 415                 | 420                     |
| Arg Lys Leu Arg | Tyr Leu Asp Leu Ser | His Asn Asn Leu Thr Phe |
| 425             | 430                 | 435                     |
| Leu Pro Ala Asp | Ile Gly Leu Leu Gln | Asn Leu Gln Asn Leu Ala |
| 440             | 445                 | 450                     |
| Ile Thr Ala Asn | Arg Ile Glu Thr Leu | Pro Pro Glu Leu Phe Gln |
| 455             | 460                 | 465                     |
| Cys Arg Lys Leu | Arg Ala Leu His Leu | Gly Asn Asn Val Leu Gln |
| 470             | 475                 | 480                     |
| Ser Leu Pro Ser | Arg Val Gly Glu Leu | Thr Asn Leu Thr Gln Ile |
| 485             | 490                 | 495                     |
| Glu Leu Arg Gly | Asn Arg Leu Glu Cys | Leu Pro Val Glu Leu Gly |
| 500             | 505                 | 510                     |
| Glu Cys Pro Leu | Leu Lys Arg Ser Gly | Leu Val Val Glu Glu Asp |
| 515             | 520                 | 525                     |
| Leu Phe Asn Thr | Leu Pro Pro Glu Val | Lys Glu Arg Leu Trp Arg |
| 530             | 535                 | 540                     |
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<211> 452

<212> PRT

<213> Homo Sapien

<400> 255

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| Met | Glu | Leu | Ala | Leu | Arg | Arg | Ser | Pro | Val | Pro | Arg | Trp | Leu | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Pro | Leu | Leu | Leu | Gly | Leu | Asn | Ala | Gly | Ala | Val | Ile | Asp |
|     |     |     | 20  |     |     |     |     |     | 25  |     |     |     | 30  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Pro | Thr | Glu | Glu | Gly | Lys | Glu | Val | Trp | Asp | Tyr | Val | Thr | Val |
|     |     |     | 35  |     |     |     |     |     | 40  |     |     |     | 45  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Lys | Asp | Ala | Tyr | Met | Phe | Trp | Trp | Leu | Tyr | Tyr | Ala | Thr | Asn |
|     |     |     | 50  |     |     |     |     |     | 55  |     |     |     | 60  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Cys | Lys | Asn | Phe | Ser | Glu | Leu | Pro | Leu | Val | Met | Trp | Leu | Gln |
|     |     |     | 65  |     |     |     |     |     | 70  |     |     |     | 75  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Gly | Pro | Gly | Gly | Ser | Ser | Thr | Gly | Phe | Gly | Asn | Phe | Glu | Glu |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| 80  |     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Gly | Pro | Leu | Asp | Ser | Asp | Leu | Lys | Pro | Arg | Lys | Thr | Thr | Trp |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| Leu | Gln | Ala | Ala | Ser | Leu | Leu | Phe | Val | Asp | Asn | Pro | Val | Gly | Thr |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |
| Gly | Phe | Ser | Tyr | Val | Asn | Gly | Ser | Gly | Ala | Tyr | Ala | Lys | Asp | Leu |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |
| Ala | Met | Val | Ala | Ser | Asp | Met | Met | Val | Leu | Leu | Lys | Thr | Phe | Phe |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |
| Ser | Cys | His | Lys | Glu | Phe | Gln | Thr | Val | Pro | Phe | Tyr | Ile | Phe | Ser |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |
| Glu | Ser | Tyr | Gly | Gly | Lys | Met | Ala | Ala | Gly | Ile | Gly | Leu | Glu | Leu |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |
| Tyr | Lys | Ala | Ile | Gln | Arg | Gly | Thr | Ile | Lys | Cys | Asn | Phe | Ala | Gly |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |
| Val | Ala | Leu | Gly | Asp | Ser | Trp | Ile | Ser | Pro | Val | Asp | Ser | Val | Leu |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |
| Ser | Trp | Gly | Pro | Tyr | Leu | Tyr | Ser | Met | Ser | Leu | Leu | Glu | Asp | Lys |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |
| Gly | Leu | Ala | Glu | Val | Ser | Lys | Val | Ala | Glu | Gln | Val | Leu | Asn | Ala |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Val | Asn | Lys | Gly | Leu | Tyr | Arg | Glu | Ala | Thr | Glu | Leu | Trp | Gly | Lys |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |
| Ala | Glu | Met | Ile | Ile | Glu | Gln | Asn | Thr | Asp | Gly | Val | Asn | Phe | Tyr |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |
| Asn | Ile | Leu | Thr | Lys | Ser | Thr | Pro | Thr | Ser | Thr | Met | Glu | Ser | Ser |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |
| Leu | Glu | Phe | Thr | Gln | Ser | His | Leu | Val | Cys | Leu | Cys | Gln | Arg | His |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |
| Val | Arg | His | Leu | Gln | Arg | Asp | Ala | Leu | Ser | Gln | Leu | Met | Asn | Gly |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |
| Pro | Ile | Arg | Lys | Lys | Leu | Lys | Ile | Ile | Pro | Glu | Asp | Gln | Ser | Trp |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |
| Gly | Gly | Gln | Ala | Thr | Asn | Val | Phe | Val | Asn | Met | Glu | Glu | Asp | Phe |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |
| Met | Lys | Pro | Val | Ile | Ser | Ile | Val | Asp | Glu | Leu | Leu | Glu | Ala | Gly |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |
| Ile | Asn | Val | Thr | Val | Tyr | Asn | Gly | Gln | Leu | Asp | Leu | Ile | Val | Asp |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Thr | Met | Gly | Gln | Glu | Ala | Trp | Val | Arg | Lys | Leu | Lys | Trp | Pro | Glu |  |
|     |     |     |     | 380 |     |     |     |     | 385 |     |     |     |     | 390 |  |
| Leu | Pro | Lys | Phe | Ser | Gln | Leu | Lys | Trp | Lys | Ala | Leu | Tyr | Ser | Asp |  |
|     |     |     |     | 395 |     |     |     |     | 400 |     |     |     |     | 405 |  |
| Pro | Lys | Ser | Leu | Glu | Thr | Ser | Ala | Phe | Val | Lys | Ser | Tyr | Lys | Asn |  |
|     |     |     |     | 410 |     |     |     |     | 415 |     |     |     |     | 420 |  |
| Leu | Ala | Phe | Tyr | Trp | Ile | Leu | Lys | Ala | Gly | His | Met | Val | Pro | Ser |  |
|     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |     | 435 |  |
| Asp | Gln | Gly | Asp | Met | Ala | Leu | Lys | Met | Met | Arg | Leu | Val | Thr | Gln |  |
|     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     | 450 |  |

Gln Glu

<210> 256

<211> 1100

<212> DNA

<213> Homo Sapien

<400> 256

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ccgttatcag gaccatgcgg ccgacgggtc atcacgtcgc gcatcgtggg 150
tgagaggac gccgaactcg ggcgttgccc gtggcagggg agcctgcgcc 200
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tttgagtgga tccagaagct gatggcccag agtggcatgt cccagccaga 900

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tgggggccggt ctgagcctac ctgagcccat gcagcctggg gccactgcca 1000
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<210> 257
<211> 314
<212> PRT
<213> Homo Sapien

<400> 257
Met Gly Ala Arg Gly Ala Leu Leu Leu Ala Leu Leu Leu Ala Arg
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Ala Gly Leu Arg Lys Pro Glu Ser Gln Glu Ala Ala Pro Leu Ser
          20           25          30
Gly Pro Cys Gly Arg Arg Val Ile Thr Ser Arg Ile Val Gly Gly
          35           40          45
Glu Asp Ala Glu Leu Gly Arg Trp Pro Trp Gln Gly Ser Leu Arg
          50           55          60
Leu Trp Asp Ser His Val Cys Gly Val Ser Leu Leu Ser His Arg
          65           70          75
Trp Ala Leu Thr Ala Ala His Cys Phe Glu Thr Tyr Ser Asp Leu
          80           85          90
Ser Asp Pro Ser Gly Trp Met Val Gln Phe Gly Gln Leu Thr Ser
          95          100         105
Met Pro Ser Phe Trp Ser Leu Gln Ala Tyr Tyr Thr Arg Tyr Phe
         110         115         120
Val Ser Asn Ile Tyr Leu Ser Pro Arg Tyr Leu Gly Asn Ser Pro
         125         130         135
Tyr Asp Ile Ala Leu Val Lys Leu Ser Ala Pro Val Thr Tyr Thr
         140         145         150
Lys His Ile Gln Pro Ile Cys Leu Gln Ala Ser Thr Phe Glu Phe
         155         160         165
Glu Asn Arg Thr Asp Cys Trp Val Thr Gly Trp Gly Tyr Ile Lys
         170         175         180
Glu Asp Glu Ala Leu Pro Ser Pro His Thr Leu Gln Glu Val Gln
         185         190         195
Val Ala Ile Ile Asn Asn Ser Met Cys Asn His Leu Phe Leu Lys
         200         205         210
Tyr Ser Phe Arg Lys Asp Ile Phe Gly Asp Met Val Cys Ala Gly
         215         220         225

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ala | Gln | Gly | Gly | Lys | Asp | Ala | Cys | Phe | Gly | Asp | Ser | Gly | Gly | 230 | 235 | 240 |
| Pro | Leu | Ala | Cys | Asn | Lys | Asn | Gly | Leu | Trp | Tyr | Gln | Ile | Gly | Val | 245 | 250 | 255 |
| Val | Ser | Trp | Gly | Val | Gly | Cys | Gly | Arg | Pro | Asn | Arg | Pro | Gly | Val | 260 | 265 | 270 |
| Tyr | Thr | Asn | Ile | Ser | His | His | Phe | Glu | Trp | Ile | Gln | Lys | Leu | Met | 275 | 280 | 285 |
| Ala | Gln | Ser | Gly | Met | Ser | Gln | Pro | Asp | Pro | Ser | Trp | Pro | Leu | Leu | 290 | 295 | 300 |
| Phe | Phe | Pro | Leu | Leu | Trp | Ala | Leu | Pro | Leu | Leu | Gly | Pro | Val |     | 305 | 310 |     |

<210> 258

<211> 2427

<212> DNA

<213> Homo Sapien

<400> 258

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cgtgcggacc ctgaggaaga gctgagtctc acctttgccc tgagacagca 200
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<210> 259

<211> 556

<212> PRT

<213> Homo Sapien

<400> 259

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Leu Pro Pro Gly Trp Val Ser Leu Gly Arg Ala Asp Pro Glu Glu  
35 40 45

Glu Leu Ser Leu Thr Phe Ala Leu Arg Gln Gln Asn Val Glu Arg  
50 55 60

Leu Ser Glu Leu Val Gln Ala Val Ser Asp Pro Ser Ser Pro Gln  
65 70 75

Tyr Gly Lys Tyr Leu Thr Leu Glu Asn Val Ala Asp Leu Val Arg  
80 85 90

Pro Ser Pro Leu Thr Leu His Thr Val Gln Lys Trp Leu Leu Ala  
95 100 105

Ala Gly Ala Gln Lys Cys His Ser Val Ile Thr Gln Asp Phe Leu  
110 115 120

Thr Cys Trp Leu Ser Ile Arg Gln Ala Glu Leu Leu Leu Pro Gly  
125 130 135

Ala Glu Phe His His Tyr Val Gly Gly Pro Thr Glu Thr His Val  
140 145 150

Val Arg Ser Pro His Pro Tyr Gln Leu Pro Gln Ala Leu Ala Pro  
155 160 165

His Val Asp Phe Val Gly Gly Leu His Arg Phe Pro Pro Thr Ser  
170 175 180

Ser Leu Arg Gln Arg Pro Glu Pro Gln Val Thr Gly Thr Val Gly  
185 190 195

Leu His Leu Gly Val Thr Pro Ser Val Ile Arg Lys Arg Tyr Asn  
200 205 210

Leu Thr Ser Gln Asp Val Gly Ser Gly Thr Ser Asn Asn Ser Gln  
215 220 225

Ala Cys Ala Gln Phe Leu Glu Gln Tyr Phe His Asp Ser Asp Leu  
230 235 240

Ala Gln Phe Met Arg Leu Phe Gly Gly Asn Phe Ala His Gln Ala

|                 |                     |                         |     |     |     |
|-----------------|---------------------|-------------------------|-----|-----|-----|
|                 | 245                 |                         | 250 |     | 255 |
| Ser Val Ala Arg | Val Val Gly Gln Gln | Gly Arg Gly Arg Ala Gly |     |     |     |
|                 | 260                 | 265                     |     | 270 |     |
| Ile Glu Ala Ser | Leu Asp Val Gln Tyr | Leu Met Ser Ala Gly Ala |     |     |     |
|                 | 275                 | 280                     |     | 285 |     |
| Asn Ile Ser Thr | Trp Val Tyr Ser Ser | Pro Gly Arg His Glu Gly |     |     |     |
|                 | 290                 | 295                     |     | 300 |     |
| Gln Glu Pro Phe | Leu Gln Trp Leu Met | Leu Leu Ser Asn Glu Ser |     |     |     |
|                 | 305                 | 310                     |     | 315 |     |
| Ala Leu Pro His | Val His Thr Val Ser | Tyr Gly Asp Asp Glu Asp |     |     |     |
|                 | 320                 | 325                     |     | 330 |     |
| Ser Leu Ser Ser | Ala Tyr Ile Gln Arg | Val Asn Thr Glu Leu Met |     |     |     |
|                 | 335                 | 340                     |     | 345 |     |
| Lys Ala Ala Ala | Arg Gly Leu Thr Leu | Leu Phe Ala Ser Gly Asp |     |     |     |
|                 | 350                 | 355                     |     | 360 |     |
| Ser Gly Ala Gly | Cys Trp Ser Val Ser | Gly Arg His Gln Phe Arg |     |     |     |
|                 | 365                 | 370                     |     | 375 |     |
| Pro Thr Phe Pro | Ala Ser Ser Pro Tyr | Val Thr Thr Val Gly Gly |     |     |     |
|                 | 380                 | 385                     |     | 390 |     |
| Thr Ser Phe Gln | Glu Pro Phe Leu Ile | Thr Asn Glu Ile Val Asp |     |     |     |
|                 | 395                 | 400                     |     | 405 |     |
| Tyr Ile Ser Gly | Gly Gly Phe Ser Asn | Val Phe Pro Arg Pro Ser |     |     |     |
|                 | 410                 | 415                     |     | 420 |     |
| Tyr Gln Glu Glu | Ala Val Thr Lys Phe | Leu Ser Ser Ser Pro His |     |     |     |
|                 | 425                 | 430                     |     | 435 |     |
| Leu Pro Pro Ser | Ser Tyr Phe Asn Ala | Ser Gly Arg Ala Tyr Pro |     |     |     |
|                 | 440                 | 445                     |     | 450 |     |
| Asp Val Ala Ala | Leu Ser Asp Gly Tyr | Trp Val Val Ser Asn Arg |     |     |     |
|                 | 455                 | 460                     |     | 465 |     |
| Val Pro Ile Pro | Trp Val Ser Gly Thr | Ser Ala Ser Thr Pro Val |     |     |     |
|                 | 470                 | 475                     |     | 480 |     |
| Phe Gly Gly Ile | Leu Ser Leu Ile Asn | Glu His Arg Ile Leu Ser |     |     |     |
|                 | 485                 | 490                     |     | 495 |     |
| Gly Arg Pro Pro | Leu Gly Phe Leu Asn | Pro Arg Leu Tyr Gln Gln |     |     |     |
|                 | 500                 | 505                     |     | 510 |     |
| His Gly Ala Gly | Leu Phe Asp Val Thr | Arg Gly Cys His Glu Ser |     |     |     |
|                 | 515                 | 520                     |     | 525 |     |
| Cys Leu Asp Glu | Glu Val Glu Gly Gln | Gly Phe Cys Ser Gly Pro |     |     |     |
|                 | 530                 | 535                     |     | 540 |     |

Gly Trp Asp Pro Val Thr Gly Trp Gly Thr Pro Thr Ser Gln Leu  
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Cys

<210> 260

<211> 1638

<212> DNA

<213> Homo Sapien

<400> 260

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<210> 261

<211> 383

<212> PRT

<213> Homo Sapien

<400> 261

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Gly | Ile | Pro | Gly | Leu | Leu | Phe | Leu | Leu | Phe | Phe | Leu | Leu | 1   | 5   | 10  | 15 |
| Cys | Ala | Val | Gly | Gln | Val | Ser | Pro | Tyr | Ser | Ala | Pro | Trp | Lys | Pro | 20  | 25  | 30  |    |
| Thr | Trp | Pro | Ala | Tyr | Arg | Leu | Pro | Val | Val | Leu | Pro | Gln | Ser | Thr | 35  | 40  | 45  |    |
| Leu | Asn | Leu | Ala | Lys | Pro | Asp | Phe | Gly | Ala | Glu | Ala | Lys | Leu | Glu | 50  | 55  | 60  |    |
| Val | Ser | Ser | Ser | Cys | Gly | Pro | Gln | Cys | His | Lys | Gly | Thr | Pro | Leu | 65  | 70  | 75  |    |
| Pro | Thr | Tyr | Glu | Glu | Ala | Lys | Gln | Tyr | Leu | Ser | Tyr | Glu | Thr | Leu | 80  | 85  | 90  |    |
| Tyr | Ala | Asn | Gly | Ser | Arg | Thr | Glu | Thr | Gln | Val | Gly | Ile | Tyr | Ile | 95  | 100 | 105 |    |
| Leu | Ser | Ser | Ser | Gly | Asp | Gly | Ala | Gln | His | Arg | Asp | Ser | Gly | Ser | 110 | 115 | 120 |    |
| Ser | Gly | Lys | Ser | Arg | Arg | Lys | Arg | Gln | Ile | Tyr | Gly | Tyr | Asp | Ser | 125 | 130 | 135 |    |
| Arg | Phe | Ser | Ile | Phe | Gly | Lys | Asp | Phe | Leu | Leu | Asn | Tyr | Pro | Phe | 140 | 145 | 150 |    |
| Ser | Thr | Ser | Val | Lys | Leu | Ser | Thr | Gly | Cys | Thr | Gly | Thr | Leu | Val | 155 | 160 | 165 |    |
| Ala | Glu | Lys | His | Val | Leu | Thr | Ala | Ala | His | Cys | Ile | His | Asp | Gly | 170 | 175 | 180 |    |



|                 |                     |                             |     |     |     |
|-----------------|---------------------|-----------------------------|-----|-----|-----|
| Lys Thr Tyr Val | Lys Gly Thr Gln     | Lys Leu Arg Val Gly Phe Leu | 185 | 190 | 195 |
| Lys Pro Lys Phe | Lys Asp Gly Gly Arg | Gly Ala Asn Asp Ser Thr     | 200 | 205 | 210 |
| Ser Ala Met Pro | Glu Gln Met Lys Phe | Gln Trp Ile Arg Val Lys     | 215 | 220 | 225 |
| Arg Thr His Val | Pro Lys Gly Trp Ile | Lys Gly Asn Ala Asn Asp     | 230 | 235 | 240 |
| Ile Gly Met Asp | Tyr Asp Tyr Ala Leu | Leu Glu Leu Lys Lys Pro     | 245 | 250 | 255 |
| His Lys Arg Lys | Phe Met Lys Ile Gly | Val Ser Pro Pro Ala Lys     | 260 | 265 | 270 |
| Gln Leu Pro Gly | Gly Arg Ile His Phe | Ser Gly Tyr Asp Asn Asp     | 275 | 280 | 285 |
| Arg Pro Gly Asn | Leu Val Tyr Arg Phe | Cys Asp Val Lys Asp Glu     | 290 | 295 | 300 |
| Thr Tyr Asp Leu | Leu Tyr Gln Gln Cys | Asp Ala Gln Pro Gly Ala     | 305 | 310 | 315 |
| Ser Gly Ser Gly | Val Tyr Val Arg Met | Trp Lys Arg Gln Gln Gln     | 320 | 325 | 330 |
| Lys Trp Glu Arg | Lys Ile Ile Gly Ile | Phe Ser Gly His Gln Trp     | 335 | 340 | 345 |
| Val Asp Met Asn | Gly Ser Pro Gln Asp | Phe Asn Val Ala Val Arg     | 350 | 355 | 360 |
| Ile Thr Pro Leu | Lys Tyr Ala Gln Ile | Cys Tyr Trp Ile Lys Gly     | 365 | 370 | 375 |
| Asn Tyr Leu Asp | Cys Arg Glu Gly     |                             | 380 |     |     |

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<211> 1378

<212> DNA

<213> Homo Sapien

<400> 262

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accttcacct ccctgctgct gctggcgctg acagccatcc tcaatgcggc 150
caggatacct gttccccag cctgtgggaa gccccagcag ctgaaccggg 200
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<211> 317

<212> PRT

<213> Homo Sapien

<400> 263

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Val | Ser | Gly | Ala | Pro | Pro | Ala | Leu | Gly | Gly | Gly | Cys | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Thr | Phe | Thr | Ser | Leu | Leu | Leu | Leu | Ala | Ser | Thr | Ala | Ile | Leu |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     | 30  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ala | Ala | Arg | Ile | Pro | Val | Pro | Pro | Ala | Cys | Gly | Lys | Pro | Gln |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     | 45  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Gln | Leu | Asn | Arg | Val | Val | Gly | Gly | Glu | Asp | Ser | Thr | Asp | Ser | Glu |  | 50  | 55  | 60  |
| Trp | Pro | Trp | Ile | Val | Ser | Ile | Gln | Lys | Asn | Gly | Thr | His | His | Cys |  | 65  | 70  | 75  |
| Ala | Gly | Ser | Leu | Leu | Thr | Ser | Arg | Trp | Val | Ile | Thr | Ala | Ala | His |  | 80  | 85  | 90  |
| Cys | Phe | Lys | Asp | Asn | Leu | Asn | Lys | Pro | Tyr | Leu | Phe | Ser | Val | Leu |  | 95  | 100 | 105 |
| Leu | Gly | Ala | Trp | Gln | Leu | Gly | Asn | Pro | Gly | Ser | Arg | Ser | Gln | Lys |  | 110 | 115 | 120 |
| Val | Gly | Val | Ala | Trp | Val | Glu | Pro | His | Pro | Val | Tyr | Ser | Trp | Lys |  | 125 | 130 | 135 |
| Glu | Gly | Ala | Cys | Ala | Asp | Ile | Ala | Leu | Val | Arg | Leu | Glu | Arg | Ser |  | 140 | 145 | 150 |
| Ile | Gln | Phe | Ser | Glu | Arg | Val | Leu | Pro | Ile | Cys | Leu | Pro | Asp | Ala |  | 155 | 160 | 165 |
| Ser | Ile | His | Leu | Pro | Pro | Asn | Thr | His | Cys | Trp | Ile | Ser | Gly | Trp |  | 170 | 175 | 180 |
| Gly | Ser | Ile | Gln | Asp | Gly | Val | Pro | Leu | Pro | His | Pro | Gln | Thr | Leu |  | 185 | 190 | 195 |
| Gln | Lys | Leu | Lys | Val | Pro | Ile | Ile | Asp | Ser | Glu | Val | Cys | Ser | His |  | 200 | 205 | 210 |
| Leu | Tyr | Trp | Arg | Gly | Ala | Gly | Gln | Gly | Pro | Ile | Thr | Glu | Asp | Met |  | 215 | 220 | 225 |
| Leu | Cys | Ala | Gly | Tyr | Leu | Glu | Gly | Glu | Arg | Asp | Ala | Cys | Leu | Gly |  | 230 | 235 | 240 |
| Asp | Ser | Gly | Gly | Pro | Leu | Met | Cys | Gln | Val | Asp | Gly | Ala | Trp | Leu |  | 245 | 250 | 255 |
| Leu | Ala | Gly | Ile | Ile | Ser | Trp | Gly | Glu | Gly | Cys | Ala | Glu | Arg | Asn |  | 260 | 265 | 270 |
| Arg | Pro | Gly | Val | Tyr | Ile | Ser | Leu | Ser | Ala | His | Arg | Ser | Trp | Val |  | 275 | 280 | 285 |
| Glu | Lys | Ile | Val | Gln | Gly | Val | Gln | Leu | Arg | Gly | Arg | Ala | Gln | Gly |  | 290 | 295 | 300 |
| Gly | Gly | Ala | Leu | Arg | Ala | Pro | Ser | Gln | Gly | Ser | Gly | Ala | Ala | Ala |  | 305 | 310 | 315 |
| Arg | Ser |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |

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<210> 285

<211> 463

<212> PRT

<213> Homo Sapien

<400> 285

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|
| Met | His | Gly | Ser | Cys | Ser | Phe | Leu | Met | Leu | Leu | Leu | Pro | Leu | Leu |    |  |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     |     | 15 |  |
| Leu | Leu | Leu | Val | Ala | Thr | Thr | Gly | Pro | Val | Gly | Ala | Leu | Thr | Asp |    |  |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |    |  |
| Glu | Glu | Lys | Arg | Leu | Met | Val | Glu | Leu | His | Asn | Leu | Tyr | Arg | Ala |    |  |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |    |  |
| Gln | Val | Ser | Pro | Thr | Ala | Ser | Asp | Met | Leu | His | Met | Arg | Trp | Asp |    |  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |    |  |
| Glu | Glu | Leu | Ala | Ala | Phe | Ala | Lys | Ala | Tyr | Ala | Arg | Gln | Cys | Val |    |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |    |  |
| Trp | Gly | His | Asn | Lys | Glu | Arg | Gly | Arg | Arg | Gly | Glu | Asn | Leu | Phe |    |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |    |  |
| Ala | Ile | Thr | Asp | Glu | Gly | Met | Asp | Val | Pro | Leu | Ala | Met | Glu | Glu |    |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |    |  |
| Trp | His | His | Glu | Arg | Glu | His | Tyr | Asn | Leu | Ser | Ala | Ala | Thr | Cys |    |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |    |  |
| Ser | Pro | Gly | Gln | Met | Cys | Gly | His | Tyr | Thr | Gln | Val | Val | Trp | Ala |    |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |    |  |
| Lys | Thr | Glu | Arg | Ile | Gly | Cys | Gly | Ser | His | Phe | Cys | Glu | Lys | Leu |    |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |    |  |
| Gln | Gly | Val | Glu | Glu | Thr | Asn | Ile | Glu | Leu | Leu | Val | Cys | Asn | Tyr |    |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |    |  |
| Glu | Pro | Pro | Gly | Asn | Val | Lys | Gly | Lys | Arg | Pro | Tyr | Gln | Glu | Gly |    |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |    |  |
| Thr | Pro | Cys | Ser | Gln | Cys | Pro | Ser | Gly | Tyr | His | Cys | Lys | Asn | Ser |    |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |    |  |
| Leu | Cys | Glu | Pro | Ile | Gly | Ser | Pro | Glu | Asp | Ala | Gln | Asp | Leu | Pro |    |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |    |  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Leu | Val | Thr | Glu | Ala | Pro | Ser | Phe | Arg | Ala | Thr | Glu | Ala | Ser | 215 | 220 | 225 |
| Asp | Ser | Arg | Lys | Met | Gly | Thr | Pro | Ser | Ser | Leu | Ala | Thr | Gly | Ile | 230 | 235 | 240 |
| Pro | Ala | Phe | Leu | Val | Thr | Glu | Val | Ser | Gly | Ser | Leu | Ala | Thr | Lys | 245 | 250 | 255 |
| Ala | Leu | Pro | Ala | Val | Glu | Thr | Gln | Ala | Pro | Thr | Ser | Leu | Ala | Thr | 260 | 265 | 270 |
| Lys | Asp | Pro | Pro | Ser | Met | Ala | Thr | Glu | Ala | Pro | Pro | Cys | Val | Thr | 275 | 280 | 285 |
| Thr | Glu | Val | Pro | Ser | Ile | Leu | Ala | Ala | His | Ser | Leu | Pro | Ser | Leu | 290 | 295 | 300 |
| Asp | Glu | Glu | Pro | Val | Thr | Phe | Pro | Lys | Ser | Thr | His | Val | Pro | Ile | 305 | 310 | 315 |
| Pro | Lys | Ser | Ala | Asp | Lys | Val | Thr | Asp | Lys | Thr | Lys | Val | Pro | Ser | 320 | 325 | 330 |
| Arg | Ser | Pro | Glu | Asn | Ser | Leu | Asp | Pro | Lys | Met | Ser | Leu | Thr | Gly | 335 | 340 | 345 |
| Ala | Arg | Glu | Leu | Leu | Pro | His | Ala | Gln | Glu | Glu | Ala | Glu | Ala | Glu | 350 | 355 | 360 |
| Ala | Glu | Leu | Pro | Pro | Ser | Ser | Glu | Val | Leu | Ala | Ser | Val | Phe | Pro | 365 | 370 | 375 |
| Ala | Gln | Asp | Lys | Pro | Gly | Glu | Leu | Gln | Ala | Thr | Leu | Asp | His | Thr | 380 | 385 | 390 |
| Gly | His | Thr | Ser | Ser | Lys | Ser | Leu | Pro | Asn | Phe | Pro | Asn | Thr | Ser | 395 | 400 | 405 |
| Ala | Thr | Ala | Asn | Ala | Thr | Gly | Gly | Arg | Ala | Leu | Ala | Leu | Gln | Ser | 410 | 415 | 420 |
| Ser | Leu | Pro | Gly | Ala | Glu | Gly | Pro | Asp | Lys | Pro | Ser | Val | Val | Ser | 425 | 430 | 435 |
| Gly | Leu | Asn | Ser | Gly | Pro | Gly | His | Val | Trp | Gly | Pro | Leu | Leu | Gly | 440 | 445 | 450 |
| Leu | Leu | Leu | Leu | Pro | Pro | Leu | Val | Leu | Ala | Gly | Ile | Phe |     |     | 455 | 460 |     |

<210> 286

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 286

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<210> 287  
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<220>  
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<400> 287  
 ctcatattgc acaccagtaa ttcg 24

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 ctttttcaca ttagcagacc ggacttaagt cacaacagat tatctttcat 150  
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<400> 290

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| Met | Val | Asp | Val | Leu | Leu | Leu | Phe | Ser | Leu | Cys | Leu | Leu | Phe | His | 1   | 5   | 10  | 15 |
| Ile | Ser | Arg | Pro | Asp | Leu | Ser | His | Asn | Arg | Leu | Ser | Phe | Ile | Lys | 20  | 25  | 30  |    |
| Ala | Ser | Ser | Met | Ser | His | Leu | Gln | Ser | Leu | Arg | Glu | Val | Lys | Leu | 35  | 40  | 45  |    |
| Asn | Asn | Asn | Glu | Leu | Glu | Thr | Ile | Pro | Asn | Leu | Gly | Pro | Val | Ser | 50  | 55  | 60  |    |
| Ala | Asn | Ile | Thr | Leu | Leu | Ser | Leu | Ala | Gly | Asn | Arg | Ile | Val | Glu | 65  | 70  | 75  |    |
| Ile | Leu | Pro | Glu | His | Leu | Lys | Glu | Phe | Gln | Ser | Leu | Glu | Thr | Leu | 80  | 85  | 90  |    |
| Asp | Leu | Ser | Ser | Asn | Asn | Ile | Ser | Glu | Leu | Gln | Thr | Ala | Phe | Pro | 95  | 100 | 105 |    |
| Ala | Leu | Gln | Leu | Lys | Tyr | Leu | Tyr | Leu | Asn | Ser | Asn | Arg | Val | Thr | 110 | 115 | 120 |    |
| Ser | Met | Glu | Pro | Gly | Tyr | Phe | Asp | Asn | Leu | Ala | Asn | Thr | Leu | Leu | 125 | 130 | 135 |    |
| Val | Leu | Lys | Leu | Asn | Arg | Asn | Arg | Ile | Ser | Ala | Ile | Pro | Pro | Lys | 140 | 145 | 150 |    |
| Met | Phe | Lys | Leu | Pro | Gln | Leu | Gln | His | Leu | Glu | Leu | Asn | Arg | Asn | 155 | 160 | 165 |    |
| Lys | Ile | Lys | Asn | Val | Asp | Gly | Leu | Thr | Phe | Gln | Gly | Leu | Gly | Ala | 170 | 175 | 180 |    |
| Leu | Lys | Ser | Leu | Lys | Met | Gln | Arg | Asn | Gly | Val | Thr | Lys | Leu | Met | 185 | 190 | 195 |    |
| Asp | Gly | Ala | Phe | Trp | Gly | Leu | Ser | Asn | Met | Glu | Ile | Leu | Gln | Leu | 200 | 205 | 210 |    |
| Asp | His | Asn | Asn | Leu | Thr | Glu | Ile | Thr | Lys | Gly | Trp | Leu | Tyr | Gly | 215 | 220 | 225 |    |
| Leu | Leu | Met | Leu | Gln | Glu | Leu | His | Leu | Ser | Gln | Asn | Ala | Ile | Asn | 230 | 235 | 240 |    |
| Arg | Ile | Ser | Pro | Asp | Ala | Trp | Glu | Phe | Cys | Gln | Lys | Leu | Ser | Glu | 245 | 250 | 255 |    |
| Leu | Asp | Leu | Thr | Phe | Asn | His | Leu | Ser | Arg | Leu | Asp | Asp | Ser | Ser | 260 | 265 | 270 |    |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Phe | Leu | Gly | Leu | Ser | Leu | Leu | Asn | Thr | Leu | His | Ile | Gly | Asn | Asn |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Arg | Val | Ser | Tyr | Ile | Ala | Asp | Cys | Ala | Phe | Arg | Gly | Leu | Ser | Ser |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| Leu | Lys | Thr | Leu | Asp | Leu | Lys | Asn | Asn | Glu | Ile | Ser | Trp | Thr | Ile |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |
| Glu | Asp | Met | Asn | Gly | Ala | Phe | Ser | Gly | Leu | Asp | Lys | Leu | Arg | Arg |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |
| Leu | Ile | Leu | Gln | Gly | Asn | Arg | Ile | Arg | Ser | Ile | Thr | Lys | Lys | Ala |  |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |  |
| Phe | Thr | Gly | Leu | Asp | Ala | Leu | Glu | His | Leu | Asp | Leu | Ser | Asp | Asn |  |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |  |
| Ala | Ile | Met | Ser | Leu | Gln | Gly | Asn | Ala | Phe | Ser | Gln | Met | Lys | Lys |  |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |  |
| Leu | Gln | Gln | Leu | His | Leu | Asn | Thr | Ser | Ser | Leu | Leu | Cys | Asp | Cys |  |
|     |     |     |     | 380 |     |     |     |     | 385 |     |     |     |     | 390 |  |
| Gln | Leu | Lys | Trp | Leu | Pro | Gln | Trp | Val | Ala | Glu | Asn | Asn | Phe | Gln |  |
|     |     |     |     | 395 |     |     |     |     | 400 |     |     |     |     | 405 |  |
| Ser | Phe | Val | Asn | Ala | Ser | Cys | Ala | His | Pro | Gln | Leu | Leu | Lys | Gly |  |
|     |     |     |     | 410 |     |     |     |     | 415 |     |     |     |     | 420 |  |
| Arg | Ser | Ile | Phe | Ala | Val | Ser | Pro | Asp | Gly | Phe | Val | Cys | Asp | Asp |  |
|     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |     | 435 |  |
| Phe | Pro | Lys | Pro | Gln | Ile | Thr | Val | Gln | Pro | Glu | Thr | Gln | Ser | Ala |  |
|     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     | 450 |  |
| Ile | Lys | Gly | Ser | Asn | Leu | Ser | Phe | Ile | Cys | Ser | Ala | Ala | Ser | Ser |  |
|     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     | 465 |  |
| Ser | Asp | Ser | Pro | Met | Thr | Phe | Ala | Trp | Lys | Lys | Asp | Asn | Glu | Leu |  |
|     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Leu | His | Asp | Ala | Glu | Met | Glu | Asn | Tyr | Ala | His | Leu | Arg | Ala | Gln |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |  |
| Gly | Gly | Glu | Val | Met | Glu | Tyr | Thr | Thr | Ile | Leu | Arg | Leu | Arg | Glu |  |
|     |     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |  |
| Val | Glu | Phe | Ala | Ser | Glu | Gly | Lys | Tyr | Gln | Cys | Val | Ile | Ser | Asn |  |
|     |     |     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |  |
| His | Phe | Gly | Ser | Ser | Tyr | Ser | Val | Lys | Ala | Lys | Leu | Thr | Val | Asn |  |
|     |     |     |     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |  |
| Met | Leu | Pro | Ser | Phe | Thr | Lys | Thr | Pro | Met | Asp | Leu | Thr | Ile | Arg |  |
|     |     |     |     | 545 |     |     |     |     | 550 |     |     |     |     | 555 |  |
| Ala | Gly | Ala | Met | Ala | Arg | Leu | Glu | Cys | Ala | Ala | Val | Gly | His | Pro |  |
|     |     |     |     | 560 |     |     |     |     | 565 |     |     |     |     | 570 |  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ala | Pro | Gln | Ile | Ala | Trp | Gln | Lys | Asp | Gly | Gly | Thr | Asp | Phe | Pro |  |
|     |     |     |     | 575 |     |     |     |     | 580 |     |     |     |     | 585 |  |
| Ala | Ala | Arg | Glu | Arg | Arg | Met | His | Val | Met | Pro | Glu | Asp | Asp | Val |  |
|     |     |     |     | 590 |     |     |     |     | 595 |     |     |     |     | 600 |  |
| Phe | Phe | Ile | Val | Asp | Val | Lys | Ile | Glu | Asp | Ile | Gly | Val | Tyr | Ser |  |
|     |     |     |     | 605 |     |     |     |     | 610 |     |     |     |     | 615 |  |
| Cys | Thr | Ala | Gln | Asn | Ser | Ala | Gly | Ser | Ile | Ser | Ala | Asn | Ala | Thr |  |
|     |     |     |     | 620 |     |     |     |     | 625 |     |     |     |     | 630 |  |
| Leu | Thr | Val | Leu | Glu | Thr | Pro | Ser | Phe | Leu | Arg | Pro | Leu | Leu | Asp |  |
|     |     |     |     | 635 |     |     |     |     | 640 |     |     |     |     | 645 |  |
| Arg | Thr | Val | Thr | Lys | Gly | Glu | Thr | Ala | Val | Leu | Gln | Cys | Ile | Ala |  |
|     |     |     |     | 650 |     |     |     |     | 655 |     |     |     |     | 660 |  |
| Gly | Gly | Ser | Pro | Pro | Pro | Lys | Leu | Asn | Trp | Thr | Lys | Asp | Asp | Ser |  |
|     |     |     |     | 665 |     |     |     |     | 670 |     |     |     |     | 675 |  |
| Pro | Leu | Val | Val | Thr | Glu | Arg | His | Phe | Phe | Ala | Ala | Gly | Asn | Gln |  |
|     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |     | 690 |  |
| Leu | Leu | Ile | Ile | Val | Asp | Ser | Asp | Val | Ser | Asp | Ala | Gly | Lys | Tyr |  |
|     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     | 705 |  |
| Thr | Cys | Glu | Met | Ser | Asn | Thr | Leu | Gly | Thr | Glu | Arg | Gly | Asn | Val |  |
|     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |  |
| Arg | Leu | Ser | Val | Ile | Pro | Thr | Pro | Thr | Cys | Asp | Ser | Pro | Gln | Met |  |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |  |
| Thr | Ala | Pro | Ser | Leu | Asp | Asp | Asp | Gly | Trp | Ala | Thr | Val | Gly | Val |  |
|     |     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |  |
| Val | Ile | Ile | Ala | Val | Val | Cys | Cys | Val | Val | Gly | Thr | Ser | Leu | Val |  |
|     |     |     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |  |
| Trp | Val | Val | Ile | Ile | Tyr | His | Thr | Arg | Arg | Arg | Asn | Glu | Asp | Cys |  |
|     |     |     |     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |  |
| Ser | Ile | Thr | Asn | Thr | Asp | Glu | Thr | Asn | Leu | Pro | Ala | Asp | Ile | Pro |  |
|     |     |     |     | 785 |     |     |     |     | 790 |     |     |     |     | 795 |  |
| Ser | Tyr | Leu | Ser | Ser | Gln | Gly | Thr | Leu | Ala | Asp | Arg | Gln | Asp | Gly |  |
|     |     |     |     | 800 |     |     |     |     | 805 |     |     |     |     | 810 |  |
| Tyr | Val | Ser | Ser | Glu | Ser | Gly | Ser | His | His | Gln | Phe | Val | Thr | Ser |  |
|     |     |     |     | 815 |     |     |     |     | 820 |     |     |     |     | 825 |  |
| Ser | Gly | Ala | Gly | Phe | Phe | Leu | Pro | Gln | His | Asp | Ser | Ser | Gly | Thr |  |
|     |     |     |     | 830 |     |     |     |     | 835 |     |     |     |     | 840 |  |
| Cys | His | Ile | Asp | Asn | Ser | Ser | Glu | Ala | Asp | Val | Glu | Ala | Ala | Thr |  |
|     |     |     |     | 845 |     |     |     |     | 850 |     |     |     |     | 855 |  |
| Asp | Leu | Phe | Leu | Cys | Pro | Phe | Leu | Gly | Ser | Thr | Gly | Pro | Met | Tyr |  |



|                 |                     |                         |     |      |     |
|-----------------|---------------------|-------------------------|-----|------|-----|
|                 | 860                 |                         | 865 |      | 870 |
| Leu Lys Gly Asn | Val Tyr Gly Ser Asp | Pro Phe Glu Thr Tyr His |     |      |     |
|                 | 875                 | 880                     |     | 885  |     |
| Thr Gly Cys Ser | Pro Asp Pro Arg Thr | Val Leu Met Asp His Tyr |     |      |     |
|                 | 890                 | 895                     |     | 900  |     |
| Glu Pro Ser Tyr | Ile Lys Lys Lys Glu | Cys Tyr Pro Cys Ser His |     |      |     |
|                 | 905                 | 910                     |     | 915  |     |
| Pro Ser Glu Glu | Ser Cys Glu Arg Ser | Phe Ser Asn Ile Ser Trp |     |      |     |
|                 | 920                 | 925                     |     | 930  |     |
| Pro Ser His Val | Arg Lys Leu Leu Asn | Thr Ser Tyr Ser His Asn |     |      |     |
|                 | 935                 | 940                     |     | 945  |     |
| Glu Gly Pro Gly | Met Lys Asn Leu Cys | Leu Asn Lys Ser Ser Leu |     |      |     |
|                 | 950                 | 955                     |     | 960  |     |
| Asp Phe Ser Ala | Asn Pro Glu Pro Ala | Ser Val Ala Ser Ser Asn |     |      |     |
|                 | 965                 | 970                     |     | 975  |     |
| Ser Phe Met Gly | Thr Phe Gly Lys Ala | Leu Arg Arg Pro His Leu |     |      |     |
|                 | 980                 | 985                     |     | 990  |     |
| Asp Ala Tyr Ser | Ser Phe Gly Gln Pro | Ser Asp Cys Gln Pro Arg |     |      |     |
|                 | 995                 | 1000                    |     | 1005 |     |
| Ala Phe Tyr Leu | Lys Ala His Ser Ser | Pro Asp Leu Asp Ser Gly |     |      |     |
|                 | 1010                | 1015                    |     | 1020 |     |
| Ser Glu Glu Asp | Gly Lys Glu Arg Thr | Asp Phe Gln Glu Glu Asn |     |      |     |
|                 | 1025                | 1030                    |     | 1035 |     |
| His Ile Cys Thr | Phe Lys Gln Thr Leu | Glu Asn Tyr Arg Thr Pro |     |      |     |
|                 | 1040                | 1045                    |     | 1050 |     |
| Asn Phe Gln Ser | Tyr Asp Leu Asp Thr |                         |     |      |     |
|                 | 1055                |                         |     |      |     |

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<211> 640

<212> PRT

<213> Homo Sapien

<400> 292

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Asn | Lys | Met | Thr | Leu | His | Pro | Gln | Gln | Ile | Met | Ile | Gly |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Pro | Arg | Phe | Asn | Arg | Ala | Leu | Phe | Asp | Pro | Leu | Leu | Val | Val | Leu |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |
| Leu | Ala | Leu | Gln | Leu | Leu | Val | Val | Ala | Gly | Leu | Val | Arg | Ala | Gln |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Thr | Cys | Pro | Ser | Val | Cys | Ser | Cys | Ser | Asn | Gln | Phe | Ser | Lys | Val |  | 50  | 55  | 60  |
| Ile | Cys | Val | Arg | Lys | Asn | Leu | Arg | Glu | Val | Pro | Asp | Gly | Ile | Ser |  | 65  | 70  | 75  |
| Thr | Asn | Thr | Arg | Leu | Leu | Asn | Leu | His | Glu | Asn | Gln | Ile | Gln | Ile |  | 80  | 85  | 90  |
| Ile | Lys | Val | Asn | Ser | Phe | Lys | His | Leu | Arg | His | Leu | Glu | Ile | Leu |  | 95  | 100 | 105 |
| Gln | Leu | Ser | Arg | Asn | His | Ile | Arg | Thr | Ile | Glu | Ile | Gly | Ala | Phe |  | 110 | 115 | 120 |
| Asn | Gly | Leu | Ala | Asn | Leu | Asn | Thr | Leu | Glu | Leu | Phe | Asp | Asn | Arg |  | 125 | 130 | 135 |
| Leu | Thr | Thr | Ile | Pro | Asn | Gly | Ala | Phe | Val | Tyr | Leu | Ser | Lys | Leu |  | 140 | 145 | 150 |
| Lys | Glu | Leu | Trp | Leu | Arg | Asn | Asn | Pro | Ile | Glu | Ser | Ile | Pro | Ser |  | 155 | 160 | 165 |
| Tyr | Ala | Phe | Asn | Arg | Ile | Pro | Ser | Leu | Arg | Arg | Leu | Asp | Leu | Gly |  | 170 | 175 | 180 |
| Glu | Leu | Lys | Arg | Leu | Ser | Tyr | Ile | Ser | Glu | Gly | Ala | Phe | Glu | Gly |  | 185 | 190 | 195 |
| Leu | Ser | Asn | Leu | Arg | Tyr | Leu | Asn | Leu | Ala | Met | Cys | Asn | Leu | Arg |  | 200 | 205 | 210 |
| Glu | Ile | Pro | Asn | Leu | Thr | Pro | Leu | Ile | Lys | Leu | Asp | Glu | Leu | Asp |  | 215 | 220 | 225 |
| Leu | Ser | Gly | Asn | His | Leu | Ser | Ala | Ile | Arg | Pro | Gly | Ser | Phe | Gln |  | 230 | 235 | 240 |
| Gly | Leu | Met | His | Leu | Gln | Lys | Leu | Trp | Met | Ile | Gln | Ser | Gln | Ile |  | 245 | 250 | 255 |
| Gln | Val | Ile | Glu | Arg | Asn | Ala | Phe | Asp | Asn | Leu | Gln | Ser | Leu | Val |  | 260 | 265 | 270 |
| Glu | Ile | Asn | Leu | Ala | His | Asn | Asn | Leu | Thr | Leu | Leu | Pro | His | Asp |  | 275 | 280 | 285 |
| Leu | Phe | Thr | Pro | Leu | His | His | Leu | Glu | Arg | Ile | His | Leu | His | His |  | 290 | 295 | 300 |
| Asn | Pro | Trp | Asn | Cys | Asn | Cys | Asp | Ile | Leu | Trp | Leu | Ser | Trp | Trp |  | 305 | 310 | 315 |
| Ile | Lys | Asp | Met | Ala | Pro | Ser | Asn | Thr | Ala | Cys | Cys | Ala | Arg | Cys |  | 320 | 325 | 330 |
| Asn | Thr | Pro | Pro | Asn | Leu | Lys | Gly | Arg | Tyr | Ile | Gly | Glu | Leu | Asp |  | 335 | 340 | 345 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gln | Asn | Tyr | Phe | Thr | Cys | Tyr | Ala | Pro | Val | Ile | Val | Glu | Pro | Pro |  |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |  |
| Ala | Asp | Leu | Asn | Val | Thr | Glu | Gly | Met | Ala | Ala | Glu | Leu | Lys | Cys |  |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |  |
| Arg | Ala | Ser | Thr | Ser | Leu | Thr | Ser | Val | Ser | Trp | Ile | Thr | Pro | Asn |  |
|     |     |     |     | 380 |     |     |     |     | 385 |     |     |     |     | 390 |  |
| Gly | Thr | Val | Met | Thr | His | Gly | Ala | Tyr | Lys | Val | Arg | Ile | Ala | Val |  |
|     |     |     |     | 395 |     |     |     |     | 400 |     |     |     |     | 405 |  |
| Leu | Ser | Asp | Gly | Thr | Leu | Asn | Phe | Thr | Asn | Val | Thr | Val | Gln | Asp |  |
|     |     |     |     | 410 |     |     |     |     | 415 |     |     |     |     | 420 |  |
| Thr | Gly | Met | Tyr | Thr | Cys | Met | Val | Ser | Asn | Ser | Val | Gly | Asn | Thr |  |
|     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |     | 435 |  |
| Thr | Ala | Ser | Ala | Thr | Leu | Asn | Val | Thr | Ala | Ala | Thr | Thr | Thr | Pro |  |
|     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     | 450 |  |
| Phe | Ser | Tyr | Phe | Ser | Thr | Val | Thr | Val | Glu | Thr | Met | Glu | Pro | Ser |  |
|     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     | 465 |  |
| Gln | Asp | Glu | Ala | Arg | Thr | Thr | Asp | Asn | Asn | Val | Gly | Pro | Thr | Pro |  |
|     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Val | Val | Asp | Trp | Glu | Thr | Thr | Asn | Val | Thr | Thr | Ser | Leu | Thr | Pro |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |  |
| Gln | Ser | Thr | Arg | Ser | Thr | Glu | Lys | Thr | Phe | Thr | Ile | Pro | Val | Thr |  |
|     |     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |  |
| Asp | Ile | Asn | Ser | Gly | Ile | Pro | Gly | Ile | Asp | Glu | Val | Met | Lys | Thr |  |
|     |     |     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |  |
| Thr | Lys | Ile | Ile | Ile | Gly | Cys | Phe | Val | Ala | Ile | Thr | Leu | Met | Ala |  |
|     |     |     |     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |  |
| Ala | Val | Met | Leu | Val | Ile | Phe | Tyr | Lys | Met | Arg | Lys | Gln | His | His |  |
|     |     |     |     | 545 |     |     |     |     | 550 |     |     |     |     | 555 |  |
| Arg | Gln | Asn | His | His | Ala | Pro | Thr | Arg | Thr | Val | Glu | Ile | Ile | Asn |  |
|     |     |     |     | 560 |     |     |     |     | 565 |     |     |     |     | 570 |  |
| Val | Asp | Asp | Glu | Ile | Thr | Gly | Asp | Thr | Pro | Met | Glu | Ser | His | Leu |  |
|     |     |     |     | 575 |     |     |     |     | 580 |     |     |     |     | 585 |  |
| Pro | Met | Pro | Ala | Ile | Glu | His | Glu | His | Leu | Asn | His | Tyr | Asn | Ser |  |
|     |     |     |     | 590 |     |     |     |     | 595 |     |     |     |     | 600 |  |
| Tyr | Lys | Ser | Pro | Phe | Asn | His | Thr | Thr | Thr | Val | Asn | Thr | Ile | Asn |  |
|     |     |     |     | 605 |     |     |     |     | 610 |     |     |     |     | 615 |  |
| Ser | Ile | His | Ser | Ser | Val | His | Glu | Pro | Leu | Leu | Ile | Arg | Met | Asn |  |
|     |     |     |     | 620 |     |     |     |     | 625 |     |     |     |     | 630 |  |
| Ser | Lys | Asp | Asn | Val | Gln | Glu | Thr | Gln | Ile |     |     |     |     |     |  |

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 <212> DNA  
 <213> Homo Sapien

<400> 293  
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 aaagaaggaa ttgaccgggc agcgcgaggg aggagcgcgc acgcgaccgc 150  
 gagggcgggc gtgcaccctc ggctggaagt ttgtgccggg ccccgagcgc 200  
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<212> PRT  
<213> Homo Sapien

<400> 294



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|-----|-----|-----|----|
| Met | Ser | Ala | Pro | Ser | Leu | Arg | Ala | Arg | Ala | Ala | Gly | Leu | Gly | Leu |  |  | 1   | 5   | 10  | 15 |
| Leu | Leu | Cys | Ala | Val | Leu | Gly | Arg | Ala | Gly | Arg | Ser | Asp | Ser | Gly |  |  | 20  | 25  | 30  |    |
| Gly | Arg | Gly | Glu | Leu | Gly | Gln | Pro | Ser | Gly | Val | Ala | Ala | Glu | Arg |  |  | 35  | 40  | 45  |    |
| Pro | Cys | Pro | Thr | Thr | Cys | Arg | Cys | Leu | Gly | Asp | Leu | Leu | Asp | Cys |  |  | 50  | 55  | 60  |    |
| Ser | Arg | Lys | Arg | Leu | Ala | Arg | Leu | Pro | Glu | Pro | Leu | Pro | Ser | Trp |  |  | 65  | 70  | 75  |    |
| Val | Ala | Arg | Leu | Asp | Leu | Ser | His | Asn | Arg | Leu | Ser | Phe | Ile | Lys |  |  | 80  | 85  | 90  |    |
| Ala | Ser | Ser | Met | Ser | His | Leu | Gln | Ser | Leu | Arg | Glu | Val | Lys | Leu |  |  | 95  | 100 | 105 |    |
| Asn | Asn | Asn | Glu | Leu | Glu | Thr | Ile | Pro | Asn | Leu | Gly | Pro | Val | Ser |  |  | 110 | 115 | 120 |    |
| Ala | Asn | Ile | Thr | Leu | Leu | Ser | Leu | Ala | Gly | Asn | Arg | Ile | Val | Glu |  |  | 125 | 130 | 135 |    |
| Ile | Leu | Pro | Glu | His | Leu | Lys | Glu | Phe | Gln | Ser | Leu | Glu | Thr | Leu |  |  | 140 | 145 | 150 |    |
| Asp | Leu | Ser | Ser | Asn | Asn | Ile | Ser | Glu | Leu | Gln | Thr | Ala | Phe | Pro |  |  | 155 | 160 | 165 |    |
| Ala | Leu | Gln | Leu | Lys | Tyr | Leu | Tyr | Leu | Asn | Ser | Asn | Arg | Val | Thr |  |  | 170 | 175 | 180 |    |
| Ser | Met | Glu | Pro | Gly | Tyr | Phe | Asp | Asn | Leu | Ala | Asn | Thr | Leu | Leu |  |  | 185 | 190 | 195 |    |
| Val | Leu | Lys | Leu | Asn | Arg | Asn | Arg | Ile | Ser | Ala | Ile | Pro | Pro | Lys |  |  | 200 | 205 | 210 |    |
| Met | Phe | Lys | Leu | Pro | Gln | Leu | Gln | His | Leu | Glu | Leu | Asn | Arg | Asn |  |  | 215 | 220 | 225 |    |
| Lys | Ile | Lys | Asn | Val | Asp | Gly | Leu | Thr | Phe | Gln | Gly | Leu | Gly | Ala |  |  | 230 | 235 | 240 |    |
| Leu | Lys | Ser | Leu | Lys | Met | Gln | Arg | Asn | Gly | Val | Thr | Lys | Leu | Met |  |  | 245 | 250 | 255 |    |
| Asp | Gly | Ala | Phe | Trp | Gly | Leu | Ser | Asn | Met | Glu | Ile | Leu | Gln | Leu |  |  | 260 | 265 | 270 |    |
| Asp | His | Asn | Asn | Leu | Thr | Glu | Ile | Thr | Lys | Gly | Trp | Leu | Tyr | Gly |  |  | 275 | 280 | 285 |    |
| Leu | Leu | Met | Leu | Gln | Glu | Leu | His | Leu | Ser | Gln | Asn | Ala | Ile | Asn |  |  | 290 | 295 | 300 |    |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Arg | Ile | Ser | Pro | Asp | Ala | Trp | Glu | Phe | Cys | Gln | Lys | Leu | Ser | Glu |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |
| Leu | Asp | Leu | Thr | Phe | Asn | His | Leu | Ser | Arg | Leu | Asp | Asp | Ser | Ser |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |
| Phe | Leu | Gly | Leu | Ser | Leu | Leu | Asn | Thr | Leu | His | Ile | Gly | Asn | Asn |  |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |  |
| Arg | Val | Ser | Tyr | Ile | Ala | Asp | Cys | Ala | Phe | Arg | Gly | Leu | Ser | Ser |  |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |  |
| Leu | Lys | Thr | Leu | Asp | Leu | Lys | Asn | Asn | Glu | Ile | Ser | Trp | Thr | Ile |  |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |  |
| Glu | Asp | Met | Asn | Gly | Ala | Phe | Ser | Gly | Leu | Asp | Lys | Leu | Arg | Arg |  |
|     |     |     |     | 380 |     |     |     |     | 385 |     |     |     |     | 390 |  |
| Leu | Ile | Leu | Gln | Gly | Asn | Arg | Ile | Arg | Ser | Ile | Thr | Lys | Lys | Ala |  |
|     |     |     |     | 395 |     |     |     |     | 400 |     |     |     |     | 405 |  |
| Phe | Thr | Gly | Leu | Asp | Ala | Leu | Glu | His | Leu | Asp | Leu | Ser | Asp | Asn |  |
|     |     |     |     | 410 |     |     |     |     | 415 |     |     |     |     | 420 |  |
| Ala | Ile | Met | Ser | Leu | Gln | Gly | Asn | Ala | Phe | Ser | Gln | Met | Lys | Lys |  |
|     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |     | 435 |  |
| Leu | Gln | Gln | Leu | His | Leu | Asn | Thr | Ser | Ser | Leu | Leu | Cys | Asp | Cys |  |
|     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     | 450 |  |
| Gln | Leu | Lys | Trp | Leu | Pro | Gln | Trp | Val | Ala | Glu | Asn | Asn | Phe | Gln |  |
|     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     | 465 |  |
| Ser | Phe | Val | Asn | Ala | Ser | Cys | Ala | His | Pro | Gln | Leu | Leu | Lys | Gly |  |
|     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Arg | Ser | Ile | Phe | Ala | Val | Ser | Pro | Asp | Gly | Phe | Val | Cys | Asp | Asp |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |  |
| Phe | Pro | Lys | Pro | Gln | Ile | Thr | Val | Gln | Pro | Glu | Thr | Gln | Ser | Ala |  |
|     |     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |  |
| Ile | Lys | Gly | Ser | Asn | Leu | Ser | Phe | Ile | Cys | Ser | Ala | Ala | Ser | Ser |  |
|     |     |     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |  |
| Ser | Asp | Ser | Pro | Met | Thr | Phe | Ala | Trp | Lys | Lys | Asp | Asn | Glu | Leu |  |
|     |     |     |     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |  |
| Leu | His | Asp | Ala | Glu | Met | Glu | Asn | Tyr | Ala | His | Leu | Arg | Ala | Gln |  |
|     |     |     |     | 545 |     |     |     |     | 550 |     |     |     |     | 555 |  |
| Gly | Gly | Glu | Val | Met | Glu | Tyr | Thr | Thr | Ile | Leu | Arg | Leu | Arg | Glu |  |
|     |     |     |     | 560 |     |     |     |     | 565 |     |     |     |     | 570 |  |
| Val | Glu | Phe | Ala | Ser | Glu | Gly | Lys | Tyr | Gln | Cys | Val | Ile | Ser | Asn |  |
|     |     |     |     | 575 |     |     |     |     | 580 |     |     |     |     | 585 |  |
| His | Phe | Gly | Ser | Ser | Tyr | Ser | Val | Lys | Ala | Lys | Leu | Thr | Val | Asn |  |
|     |     |     |     | 590 |     |     |     |     | 595 |     |     |     |     | 600 |  |

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Pro | Ser | Phe | Thr | Lys | Thr | Pro | Met | Asp | Leu | Thr | Ile | Arg | 605 | 610 | 615 |
| Ala | Gly | Ala | Met | Ala | Arg | Leu | Glu | Cys | Ala | Ala | Val | Gly | His | Pro | 620 | 625 | 630 |
| Ala | Pro | Gln | Ile | Ala | Trp | Gln | Lys | Asp | Gly | Gly | Thr | Asp | Phe | Pro | 635 | 640 | 645 |
| Ala | Ala | Arg | Glu | Arg | Arg | Met | His | Val | Met | Pro | Glu | Asp | Asp | Val | 650 | 655 | 660 |
| Phe | Phe | Ile | Val | Asp | Val | Lys | Ile | Glu | Asp | Ile | Gly | Val | Tyr | Ser | 665 | 670 | 675 |
| Cys | Thr | Ala | Gln | Asn | Ser | Ala | Gly | Ser | Ile | Ser | Ala | Asn | Ala | Thr | 680 | 685 | 690 |
| Leu | Thr | Val | Leu | Glu | Thr | Pro | Ser | Phe | Leu | Arg | Pro | Leu | Leu | Asp | 695 | 700 | 705 |
| Arg | Thr | Val | Thr | Lys | Gly | Glu | Thr | Ala | Val | Leu | Gln | Cys | Ile | Ala | 710 | 715 | 720 |
| Gly | Gly | Ser | Pro | Pro | Pro | Lys | Leu | Asn | Trp | Thr | Lys | Asp | Asp | Ser | 725 | 730 | 735 |
| Pro | Leu | Val | Val | Thr | Glu | Arg | His | Phe | Phe | Ala | Ala | Gly | Asn | Gln | 740 | 745 | 750 |
| Leu | Leu | Ile | Ile | Val | Asp | Ser | Asp | Val | Ser | Asp | Ala | Gly | Lys | Tyr | 755 | 760 | 765 |
| Thr | Cys | Glu | Met | Ser | Asn | Thr | Leu | Gly | Thr | Glu | Arg | Gly | Asn | Val | 770 | 775 | 780 |
| Arg | Leu | Ser | Val | Ile | Pro | Thr | Pro | Thr | Cys | Asp | Ser | Pro | Gln | Met | 785 | 790 | 795 |
| Thr | Ala | Pro | Ser | Leu | Asp | Asp | Asp | Gly | Trp | Ala | Thr | Val | Gly | Val | 800 | 805 | 810 |
| Val | Ile | Ile | Ala | Val | Val | Cys | Cys | Val | Val | Gly | Thr | Ser | Leu | Val | 815 | 820 | 825 |
| Trp | Val | Val | Ile | Ile | Tyr | His | Thr | Arg | Arg | Arg | Asn | Glu | Asp | Cys | 830 | 835 | 840 |
| Ser | Ile | Thr | Asn | Thr | Asp | Glu | Thr | Asn | Leu | Pro | Ala | Asp | Ile | Pro | 845 | 850 | 855 |
| Ser | Tyr | Leu | Ser | Ser | Gln | Gly | Thr | Leu | Ala | Asp | Arg | Gln | Asp | Gly | 860 | 865 | 870 |
| Tyr | Val | Ser | Ser | Glu | Ser | Gly | Ser | His | His | Gln | Phe | Val | Thr | Ser | 875 | 880 | 885 |
| Ser | Gly | Ala | Gly | Phe | Phe | Leu | Pro | Gln | His | Asp | Ser | Ser | Gly | Thr |     |     |     |

| 890 |     |     |     |      |     |     |     |     |      | 895 |     |     |     |      | 900 |  |  |  |  |
|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|--|--|--|--|
| Cys | His | Ile | Asp | Asn  | Ser | Ser | Glu | Ala | Asp  | Val | Glu | Ala | Ala | Thr  |     |  |  |  |  |
|     |     |     |     | 905  |     |     |     |     | 910  |     |     |     |     | 915  |     |  |  |  |  |
| Asp | Leu | Phe | Leu | Cys  | Pro | Phe | Leu | Gly | Ser  | Thr | Gly | Pro | Met | Tyr  |     |  |  |  |  |
|     |     |     |     | 920  |     |     |     |     | 925  |     |     |     |     | 930  |     |  |  |  |  |
| Leu | Lys | Gly | Asn | Val  | Tyr | Gly | Ser | Asp | Pro  | Phe | Glu | Thr | Tyr | His  |     |  |  |  |  |
|     |     |     |     | 935  |     |     |     |     | 940  |     |     |     |     | 945  |     |  |  |  |  |
| Thr | Gly | Cys | Ser | Pro  | Asp | Pro | Arg | Thr | Val  | Leu | Met | Asp | His | Tyr  |     |  |  |  |  |
|     |     |     |     | 950  |     |     |     |     | 955  |     |     |     |     | 960  |     |  |  |  |  |
| Glu | Pro | Ser | Tyr | Ile  | Lys | Lys | Lys | Glu | Cys  | Tyr | Pro | Cys | Ser | His  |     |  |  |  |  |
|     |     |     |     | 965  |     |     |     |     | 970  |     |     |     |     | 975  |     |  |  |  |  |
| Pro | Ser | Glu | Glu | Ser  | Cys | Glu | Arg | Ser | Phe  | Ser | Asn | Ile | Ser | Trp  |     |  |  |  |  |
|     |     |     |     | 980  |     |     |     |     | 985  |     |     |     |     | 990  |     |  |  |  |  |
| Pro | Ser | His | Val | Arg  | Lys | Leu | Leu | Asn | Thr  | Ser | Tyr | Ser | His | Asn  |     |  |  |  |  |
|     |     |     |     | 995  |     |     |     |     | 1000 |     |     |     |     | 1005 |     |  |  |  |  |
| Glu | Gly | Pro | Gly | Met  | Lys | Asn | Leu | Cys | Leu  | Asn | Lys | Ser | Ser | Leu  |     |  |  |  |  |
|     |     |     |     | 1010 |     |     |     |     | 1015 |     |     |     |     | 1020 |     |  |  |  |  |
| Asp | Phe | Ser | Ala | Asn  | Pro | Glu | Pro | Ala | Ser  | Val | Ala | Ser | Ser | Asn  |     |  |  |  |  |
|     |     |     |     | 1025 |     |     |     |     | 1030 |     |     |     |     | 1035 |     |  |  |  |  |
| Ser | Phe | Met | Gly | Thr  | Phe | Gly | Lys | Ala | Leu  | Arg | Arg | Pro | His | Leu  |     |  |  |  |  |
|     |     |     |     | 1040 |     |     |     |     | 1045 |     |     |     |     | 1050 |     |  |  |  |  |
| Asp | Ala | Tyr | Ser | Ser  | Phe | Gly | Gln | Pro | Ser  | Asp | Cys | Gln | Pro | Arg  |     |  |  |  |  |
|     |     |     |     | 1055 |     |     |     |     | 1060 |     |     |     |     | 1065 |     |  |  |  |  |
| Ala | Phe | Tyr | Leu | Lys  | Ala | His | Ser | Ser | Pro  | Asp | Leu | Asp | Ser | Gly  |     |  |  |  |  |
|     |     |     |     | 1070 |     |     |     |     | 1075 |     |     |     |     | 1080 |     |  |  |  |  |
| Ser | Glu | Glu | Asp | Gly  | Lys | Glu | Arg | Thr | Asp  | Phe | Gln | Glu | Glu | Asn  |     |  |  |  |  |
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 aggtacaata gaaggtcttc tgtcatttaa cctggtaaaag gcagggctgg 2700  
 aggggggaaaa taaatcatta agcctttgag taacggcaga atatatggct 2750  
 gtagatccat ttttaatgg tcatctcctt tatggtcata taactgcaca 2800  
 gctgaagatg aaaggggaaa ataaatgaaa attttacttt tcgatgccaa 2850  
 tgatacattg cactaaactg atggaagaag ttatccaaag tactgtataa 2900  
 catcttgttt attatttaat gttttctaaa ataaaaaatg ttagtggttt 2950  
 tccaaatggc ctaataaaaa caattatttg taaataaaaa cactgttagt 3000  
 at 3003

<210> 315  
 <211> 509  
 <212> PRT  
 <213> Homo Sapien

<400> 315  
 Met Asp Phe Leu Leu Ala Leu Val Leu Val Ser Ser Leu Tyr Leu  
 1 5 10 15  
 Gln Ala Ala Ala Glu Phe Asp Gly Arg Trp Pro Arg Gln Ile Val  
 20 25 30  
 Ser Ser Ile Gly Leu Cys Arg Tyr Gly Gly Arg Ile Asp Cys Cys  
 35 40 45  
 Trp Gly Trp Ala Arg Gln Ser Trp Gly Gln Cys Gln Pro Val Cys  
 50 55 60  
 Gln Pro Arg Cys Lys His Gly Glu Cys Ile Gly Pro Asn Lys Cys  
 65 70 75  
 Lys Cys His Pro Gly Tyr Ala Gly Lys Thr Cys Asn Gln Asp Leu  
 80 85 90

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Glu | Cys | Gly | Leu | Lys | Pro | Arg | Pro | Cys | Lys | His | Arg | Cys | Met | 95  | 100 | 105 |
| Asn | Thr | Tyr | Gly | Ser | Tyr | Lys | Cys | Tyr | Cys | Leu | Asn | Gly | Tyr | Met | 110 | 115 | 120 |
| Leu | Met | Pro | Asp | Gly | Ser | Cys | Ser | Ser | Ala | Leu | Thr | Cys | Ser | Met | 125 | 130 | 135 |
| Ala | Asn | Cys | Gln | Tyr | Gly | Cys | Asp | Val | Val | Lys | Gly | Gln | Ile | Arg | 140 | 145 | 150 |
| Cys | Gln | Cys | Pro | Ser | Pro | Gly | Leu | His | Leu | Ala | Pro | Asp | Gly | Arg | 155 | 160 | 165 |
| Thr | Cys | Val | Asp | Val | Asp | Glu | Cys | Ala | Thr | Gly | Arg | Ala | Ser | Cys | 170 | 175 | 180 |
| Pro | Arg | Phe | Arg | Gln | Cys | Val | Asn | Thr | Phe | Gly | Ser | Tyr | Ile | Cys | 185 | 190 | 195 |
| Lys | Cys | His | Lys | Gly | Phe | Asp | Leu | Met | Tyr | Ile | Gly | Gly | Lys | Tyr | 200 | 205 | 210 |
| Gln | Cys | His | Asp | Ile | Asp | Glu | Cys | Ser | Leu | Gly | Gln | Tyr | Gln | Cys | 215 | 220 | 225 |
| Ser | Ser | Phe | Ala | Arg | Cys | Tyr | Asn | Val | Arg | Gly | Ser | Tyr | Lys | Cys | 230 | 235 | 240 |
| Lys | Cys | Lys | Glu | Gly | Tyr | Gln | Gly | Asp | Gly | Leu | Thr | Cys | Val | Tyr | 245 | 250 | 255 |
| Ile | Pro | Lys | Val | Met | Ile | Glu | Pro | Ser | Gly | Pro | Ile | His | Val | Pro | 260 | 265 | 270 |
| Lys | Gly | Asn | Gly | Thr | Ile | Leu | Lys | Gly | Asp | Thr | Gly | Asn | Asn | Asn | 275 | 280 | 285 |
| Trp | Ile | Pro | Asp | Val | Gly | Ser | Thr | Trp | Trp | Pro | Pro | Lys | Thr | Pro | 290 | 295 | 300 |
| Tyr | Ile | Pro | Pro | Ile | Ile | Thr | Asn | Arg | Pro | Thr | Ser | Lys | Pro | Thr | 305 | 310 | 315 |
| Thr | Arg | Pro | Thr | Pro | Lys | Pro | Thr | Pro | Ile | Pro | Thr | Pro | Pro | Pro | 320 | 325 | 330 |
| Pro | Pro | Pro | Leu | Pro | Thr | Glu | Leu | Arg | Thr | Pro | Leu | Pro | Pro | Thr | 335 | 340 | 345 |
| Thr | Pro | Glu | Arg | Pro | Thr | Thr | Gly | Leu | Thr | Thr | Ile | Ala | Pro | Ala | 350 | 355 | 360 |
| Ala | Ser | Thr | Pro | Pro | Gly | Gly | Ile | Thr | Val | Asp | Asn | Arg | Val | Gln | 365 | 370 | 375 |
| Thr | Asp | Pro | Gln | Lys | Pro | Arg | Gly | Asp | Val | Phe | Ser | Val | Leu | Val |     |     |     |

|                 | 380                 |                         | 385 |  | 390 |
|-----------------|---------------------|-------------------------|-----|--|-----|
| His Ser Cys Asn | Phe Asp His Gly Leu | Cys Gly Trp Ile Arg Glu |     |  |     |
|                 | 395                 | 400                     |     |  | 405 |
| Lys Asp Asn Asp | Leu His Trp Glu Pro | Ile Arg Asp Pro Ala Gly |     |  |     |
|                 | 410                 | 415                     |     |  | 420 |
| Gly Gln Tyr Leu | Thr Val Ser Ala Ala | Lys Ala Pro Gly Gly Lys |     |  |     |
|                 | 425                 | 430                     |     |  | 435 |
| Ala Ala Arg Leu | Val Leu Pro Leu Gly | Arg Leu Met His Ser Gly |     |  |     |
|                 | 440                 | 445                     |     |  | 450 |
| Asp Leu Cys Leu | Ser Phe Arg His Lys | Val Thr Gly Leu His Ser |     |  |     |
|                 | 455                 | 460                     |     |  | 465 |
| Gly Thr Leu Gln | Val Phe Val Arg Lys | His Gly Ala His Gly Ala |     |  |     |
|                 | 470                 | 475                     |     |  | 480 |
| Ala Leu Trp Gly | Arg Asn Gly Gly His | Gly Trp Arg Gln Thr Gln |     |  |     |
|                 | 485                 | 490                     |     |  | 495 |
| Ile Thr Leu Arg | Gly Ala Asp Ile Lys | Ser Glu Ser Gln Arg     |     |  |     |
|                 | 500                 | 505                     |     |  |     |

<210> 316

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 316

gatggttcct gctcaagtgc cctg 24

<210> 317

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 317

ttgcacttgt aggacccacg tacg 24

<210> 318

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 318

ctgatgggag gacctgtgta gatgttgatg aatgtgctac aggaagagcc 50

<210> 319  
<211> 2110  
<212> DNA  
<213> Homo Sapien

<400> 319  
cttcttttgaa aaggattatc acctgatcag gttctctctg catttgcccc 50  
tttagattgt gaaatgtggc tcaaggtctt cacaactttc ctttcctttg 100  
caacagggtgc ttgctcgggg ctgaagggtga cagtgccatc acacactgtc 150  
catggcggtca gaggtcaggc cctctacctt cccgtccact atggcttcca 200  
cactccagca tcagacatcc agatcatatg gctatttgag agaccccaca 250  
caatgcccac atacttactg ggctctgtga ataagtctgt ggttcctgac 300  
ttggaatacc aacacaagtt caccatgatg ccacccaatg catctctgct 350  
tatcaaccca ctgcagttcc ctgatgaagg caattacatc gtgaagggtca 400  
acattcaggg aaatggaact ctatctgcca gtcagaagat acaagtcacg 450  
gttgatgatc ctgtcacaaa gccagtgggtg cagattcatc ctccctctgg 500  
ggctgtggag tatgtgggga acatgaccct gacatgccat gtggaagggg 550  
gcactcgggt agcttaccaa tggctaaaaa atgggagacc tgtccacacc 600  
agctccacct actccttttc tccccaaaac aatacccttc atattgctcc 650  
agtaaccaag gaagacattg ggaattacag ctgcctggtg aggaaccctg 700  
tcagtgaat ggaaagtgat atcattatgc ccatcatata ttatggacct 750  
tatggacttc aagtgaattc tgataaaggg ctaaaagtag ggggaagtgtt 800  
tactgttgac cttggagagg ccctcctatt tgattgttct gctgattctc 850  
atccccccaa cacctactcc tggattagga ggactgacaa tactacatat 900  
atcattaagc atgggcctcg cttagaagtt gcatctgaga aagtagccca 950  
gaagacaatg gactatgtgt gctgtgctta caacaacata accggcaggc 1000  
aagatgaaac tcatttcaca gttatcatca cttcgtagg actggagaag 1050  
cttgacaga aaggaaaatc attgtcacct ttagcaagta taactggaat 1100  
atcactattt ttgattatat ccatgtgtct tctcttcta tggaaaaaat 1150  
atcaacccta caaagttata aaacagaaac tagaaggcag gccagaaaca 1200  
gaatacagga aagctcaaac attttcaggc catgaagatg ctctggatga 1250  
cttcggaata tatgaatttg ttgcttttcc agatgtttct ggtgtttcca 1300  
ggattccaag caggtctgtt ccagcctctg attgtgtatc ggggcaagat 1350

ttgcacagta cagtgtatga agttattcag cacatccctg cccagcagca 1400  
 agaccatcca gagtgaactt tcatgggcta aacagtacat tcgagtgaaa 1450  
 ttctgaagaa acattttaag gaaaaacagt ggaaaagtat attaatctgg 1500  
 aatcagtgaa gaaaccagga ccaacacctc ttactcatta ttcctttaca 1550  
 tgcagaatag aggcattht gcaaattgaa ctgcagggttt ttcagcatat 1600  
 acacaatgtc ttgtgcaaca gaaaaacatg ttgggggaaat attcctcagt 1650  
 ggagagtcgt tctcatgctg acggggagaa cgaaagtac aggggtttcc 1700  
 tcataagttt tgtatgaaat atctctacaa acctcaatta gttctactct 1750  
 acactttcac tatcatcaac actgagacta tctgtctca cctacaaatg 1800  
 tggaaacttt acattgttcg atttttcagc agactttggt ttattaaatt 1850  
 tttattagt ttaagaatgc taaatttatg tttcaatttt atttccaaat 1900  
 ttctatcttg ttattgtac acaaagtaa taaggatggt tgtcacaaaa 1950  
 aaaaaactat gccttctctt ttttttcaat caccagtagt atttttgaga 2000  
 agacttgatga acacttaagg aaatgactat taaagtctta tttttatttt 2050  
 tttcaaggaa agatggattc aaataaatta ttctgttttt gcttttaaaa 2100  
 aaaaaaaaaa 2110

<210> 320  
 <211> 450  
 <212> PRT  
 <213> Homo Sapien

<400> 320  
 Met Trp Leu Lys Val Phe Thr Thr Phe Leu Ser Phe Ala Thr Gly  
 1 5 10 15  
 Ala Cys Ser Gly Leu Lys Val Thr Val Pro Ser His Thr Val His  
 20 25 30  
 Gly Val Arg Gly Gln Ala Leu Tyr Leu Pro Val His Tyr Gly Phe  
 35 40 45  
 His Thr Pro Ala Ser Asp Ile Gln Ile Ile Trp Leu Phe Glu Arg  
 50 55 60  
 Pro His Thr Met Pro Lys Tyr Leu Leu Gly Ser Val Asn Lys Ser  
 65 70 75  
 Val Val Pro Asp Leu Glu Tyr Gln His Lys Phe Thr Met Met Pro  
 80 85 90  
 Pro Asn Ala Ser Leu Leu Ile Asn Pro Leu Gln Phe Pro Asp Glu  
 95 100 105



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Asn | Tyr | Ile | Val | Lys | Val | Asn | Ile | Gln | Gly | Asn | Gly | Thr | Leu | 110 | 115 | 120 |
| Ser | Ala | Ser | Gln | Lys | Ile | Gln | Val | Thr | Val | Asp | Asp | Pro | Val | Thr | 125 | 130 | 135 |
| Lys | Pro | Val | Val | Gln | Ile | His | Pro | Pro | Ser | Gly | Ala | Val | Glu | Tyr | 140 | 145 | 150 |
| Val | Gly | Asn | Met | Thr | Leu | Thr | Cys | His | Val | Glu | Gly | Gly | Thr | Arg | 155 | 160 | 165 |
| Leu | Ala | Tyr | Gln | Trp | Leu | Lys | Asn | Gly | Arg | Pro | Val | His | Thr | Ser | 170 | 175 | 180 |
| Ser | Thr | Tyr | Ser | Phe | Ser | Pro | Gln | Asn | Asn | Thr | Leu | His | Ile | Ala | 185 | 190 | 195 |
| Pro | Val | Thr | Lys | Glu | Asp | Ile | Gly | Asn | Tyr | Ser | Cys | Leu | Val | Arg | 200 | 205 | 210 |
| Asn | Pro | Val | Ser | Glu | Met | Glu | Ser | Asp | Ile | Ile | Met | Pro | Ile | Ile | 215 | 220 | 225 |
| Tyr | Tyr | Gly | Pro | Tyr | Gly | Leu | Gln | Val | Asn | Ser | Asp | Lys | Gly | Leu | 230 | 235 | 240 |
| Lys | Val | Gly | Glu | Val | Phe | Thr | Val | Asp | Leu | Gly | Glu | Ala | Ile | Leu | 245 | 250 | 255 |
| Phe | Asp | Cys | Ser | Ala | Asp | Ser | His | Pro | Pro | Asn | Thr | Tyr | Ser | Trp | 260 | 265 | 270 |
| Ile | Arg | Arg | Thr | Asp | Asn | Thr | Thr | Tyr | Ile | Ile | Lys | His | Gly | Pro | 275 | 280 | 285 |
| Arg | Leu | Glu | Val | Ala | Ser | Glu | Lys | Val | Ala | Gln | Lys | Thr | Met | Asp | 290 | 295 | 300 |
| Tyr | Val | Cys | Cys | Ala | Tyr | Asn | Asn | Ile | Thr | Gly | Arg | Gln | Asp | Glu | 305 | 310 | 315 |
| Thr | His | Phe | Thr | Val | Ile | Ile | Thr | Ser | Val | Gly | Leu | Glu | Lys | Leu | 320 | 325 | 330 |
| Ala | Gln | Lys | Gly | Lys | Ser | Leu | Ser | Pro | Leu | Ala | Ser | Ile | Thr | Gly | 335 | 340 | 345 |
| Ile | Ser | Leu | Phe | Leu | Ile | Ile | Ser | Met | Cys | Leu | Leu | Phe | Leu | Trp | 350 | 355 | 360 |
| Lys | Lys | Tyr | Gln | Pro | Tyr | Lys | Val | Ile | Lys | Gln | Lys | Leu | Glu | Gly | 365 | 370 | 375 |
| Arg | Pro | Glu | Thr | Glu | Tyr | Arg | Lys | Ala | Gln | Thr | Phe | Ser | Gly | His | 380 | 385 | 390 |
| Glu | Asp | Ala | Leu | Asp | Asp | Phe | Gly | Ile | Tyr | Glu | Phe | Val | Ala | Phe | 395 | 400 | 405 |

Pro Asp Val Ser Gly Val Ser Arg Ile Pro Ser Arg Ser Val Pro  
410 415 420

Ala Ser Asp Cys Val Ser Gly Gln Asp Leu His Ser Thr Val Tyr  
425 430 435

Glu Val Ile Gln His Ile Pro Ala Gln Gln Gln Asp His Pro Glu  
440 445 450

<210> 321

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 321

gatacctgtca caaagccagt ggtgc 25

<210> 322

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 322

cactgacagg gttcctcacc cagg 24

<210> 323

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 323

ctccctctgg gctgtggagt atgtggggaa catgaccctg acatg 45

<210> 324

<211> 2397

<212> DNA

<213> Homo Sapien

<400> 324

gcaagcggcg aaatggcgcc ctccgggagt cttgcagttc ccctggcagt 50

cctggtgctg ttgctttggg gtgctccctg gacgcacggg cggcggagca 100

acgttcgcgt catcacggac gagaactgga gagaactgct ggaaggagac 150

tggatgatag aattttatgc cccgtggtgc cctgcttgct aaaatcttca 200

accggaatgg gaaagttttg ctgaatgggg agaagatctt gaggttaata 250

ttgcgaaagt agatgtcaca gagcagccag gactgagtgg acggtttata 300  
 ataactgctc ttctactat ttatcattgt aaagatgggtg aatttaggcg 350  
 ctatcagggg ccaaggacta agaaggactt cataaacttt ataagtgata 400  
 aagagtggaa gagtattgag cccgtttcat catggtttgg tccaggttct 450  
 gttctgatga gtagtatgtc agcactcttt cagctatcta tgtggatcag 500  
 gacgtgccat aactacttta ttgaagacct tggattgcca gtgtggggat 550  
 catatactgt ttttgcttta gcaactctgt tttccggact gttattagga 600  
 ctctgtatga tatTTgtggc agattgcctt tgtccttcaa aaaggcgag 650  
 accacagcca taccatacc cttcaaaaaa attattatca gaatctgcac 700  
 aacctttgaa aaaagtggag gaggaacaag aggcggatga agaagatgtt 750  
 tcagaagaag aagctgaaag taaagaagga acaaacaag actttccaca 800  
 gaatgccata agacaacgct ctctgggtcc atcattggcc acagataaat 850  
 cctagttaaa ttttatagtt atcttaatat tatgattttg ataaaaacag 900  
 aagattgatc attttgttt gtttgaagtg aactgtgact tttttgaata 950  
 ttgcaggggt cagtctagat tgtcattaaa ttgaagagtc tacattcaga 1000  
 acataaaagc actagggtata caagtttgaa atatgattta agcacagtat 1050  
 gatggtttaa atagttctct aatttttgaa aaatcgtgcc aagcaataag 1100  
 atttatgtat atttgtttta taataaccta tttcaagtct gagttttgaa 1150  
 aatttacatt tcccaagtat tgcattattg aggtatttaa gaagattatt 1200  
 ttagagaaaa atatttctca tttgatataa ttttctctg tttcactgtg 1250  
 tgaaaaaaag aagatatatt ccataaatgg gaagtttgcc cattgtctca 1300  
 agaaatgtgt atttcagtga caatttcgtg gtcttttttag aggtatattc 1350  
 caaaatttcc ttgtattttt aggttatgca actaataaaa actaccttac 1400  
 attaattaat tacagttttc tacacatggg aatacaggat atgctactga 1450  
 tttaggaagt ttttaagttc atgggtattct cttgattcca acaaagtttg 1500  
 attttctctt gtatttttct tacttactat gggttacatt ttttattttt 1550  
 caaattggat gataatttct tggaaacatt ttttatgttt tagtaaacag 1600  
 tatttttttg ttgtttcaaa ctgaagttaa ctgagagatc catcaaattg 1650  
 aacaatctgt tgtaatttaa aattttggcc acttttttca gattttacat 1700  
 cattcttgct gaacttcaac ttgaaattgt ttttttttcc tttttggatg 1750

tgaagggtgaa cattcctgat ttttgtctga tgtgaaaaag ccttggtatt 1800  
ttacatttttg aaaattcaaa gaagcttaat ataaaagttt gcattctact 1850  
caggaaaaag catcttcttg tatatgtctt aaatgtattt ttgtcctcat 1900  
atacagaaag ttcttaattg attttacagt ctgtaatgct tgatgtttta 1950  
aaataataac atttttatat tttttaaaag acaaacttca tattatcctg 2000  
tgttctttcc tgactggtaa tattgtgtgg gatttcacag gtaaaagtca 2050  
gtaggatgga acatttttagt gtattttttac tccttaaaga gctagaatac 2100  
atagtttttca ccttaaaaga aggggggaaaa tcataaatac aatgaatcaa 2150  
ctgaccatta cgtagtagac aatttctgta atgtcccctt ctttctaggc 2200  
tctgttgctg tgtgaatcca ttagatttac agtatcgtaa tatacaagtt 2250  
ttcttttaaag ccctctcctt tagaatttaa aatattgtac cattaaagag 2300  
tttggatgtg taacttgtga tgccttagaa aaatatccta agcacaaaaat 2350  
aaacctttct aaccacttca ttaaagctga aaaaaaaaaa aaaaaaa 2397

<210> 325  
<211> 280  
<212> PRT  
<213> Homo Sapien

<400> 325  
Met Ala Pro Ser Gly Ser Leu Ala Val Pro Leu Ala Val Leu Val  
1 5 10 15  
Leu Leu Leu Trp Gly Ala Pro Trp Thr His Gly Arg Arg Ser Asn  
20 25 30  
Val Arg Val Ile Thr Asp Glu Asn Trp Arg Glu Leu Leu Glu Gly  
35 40 45  
Asp Trp Met Ile Glu Phe Tyr Ala Pro Trp Cys Pro Ala Cys Gln  
50 55 60  
Asn Leu Gln Pro Glu Trp Glu Ser Phe Ala Glu Trp Gly Glu Asp  
65 70 75  
Leu Glu Val Asn Ile Ala Lys Val Asp Val Thr Glu Gln Pro Gly  
80 85 90  
Leu Ser Gly Arg Phe Ile Ile Thr Ala Leu Pro Thr Ile Tyr His  
95 100 105  
Cys Lys Asp Gly Glu Phe Arg Arg Tyr Gln Gly Pro Arg Thr Lys  
110 115 120  
Lys Asp Phe Ile Asn Phe Ile Ser Asp Lys Glu Trp Lys Ser Ile  
125 130 135

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Pro | Val | Ser | Ser | Trp | Phe | Gly | Pro | Gly | Ser | Val | Leu | Met | Ser | 140 | 145 | 150 |
| Ser | Met | Ser | Ala | Leu | Phe | Gln | Leu | Ser | Met | Trp | Ile | Arg | Thr | Cys | 155 | 160 | 165 |
| His | Asn | Tyr | Phe | Ile | Glu | Asp | Leu | Gly | Leu | Pro | Val | Trp | Gly | Ser | 170 | 175 | 180 |
| Tyr | Thr | Val | Phe | Ala | Leu | Ala | Thr | Leu | Phe | Ser | Gly | Leu | Leu | Leu | 185 | 190 | 195 |
| Gly | Leu | Cys | Met | Ile | Phe | Val | Ala | Asp | Cys | Leu | Cys | Pro | Ser | Lys | 200 | 205 | 210 |
| Arg | Arg | Arg | Pro | Gln | Pro | Tyr | Pro | Tyr | Pro | Ser | Lys | Lys | Leu | Leu | 215 | 220 | 225 |
| Ser | Glu | Ser | Ala | Gln | Pro | Leu | Lys | Lys | Val | Glu | Glu | Glu | Gln | Glu | 230 | 235 | 240 |
| Ala | Asp | Glu | Glu | Asp | Val | Ser | Glu | Glu | Glu | Ala | Glu | Ser | Lys | Glu | 245 | 250 | 255 |
| Gly | Thr | Asn | Lys | Asp | Phe | Pro | Gln | Asn | Ala | Ile | Arg | Gln | Arg | Ser | 260 | 265 | 270 |
| Leu | Gly | Pro | Ser | Leu | Ala | Thr | Asp | Lys | Ser |     |     |     |     |     | 275 | 280 |     |

<210> 326

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 326

tgaggtgggc aagcggcgaa atg 23

<210> 327

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 327

tatgtggatc aggacgtgcc 20

<210> 328

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 328

tgcaggggttc agtctagatt g 21

<210> 329

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 329

ttgaaggaca aaggcaatct gccac 25

<210> 330

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 330

ggagtcttgc agttccctg gcagtcctgg tgctgttgct ttggg 45

<210> 331

<211> 2168

<212> DNA

<213> Homo Sapien

<400> 331

gcgagtgtcc agctgcggag acccgtgata attcggtaac taattcaaca 50

aacgggaccc ttctgtgtgc cagaaaccgc aagcagttgc taaccagtg 100

ggacaggcgg attggaagag cgggaaggtc ctggcccaga gcagtgtgac 150

acttccctct gtgaccatga aactctgggt gtctgcattg ctgatggcct 200

ggtttggtgt cctgagctgt gtgcaggccg aattcttcac ctctattggg 250

cacatgactg acctgattta tgcagagaaa gagctgggtgc agtctctgaa 300

agagtacatc cttgtggagg aagccaagct ttccaagatt aagagctggg 350

ccaacaaaat ggaagccttg actagcaagt cagctgctga tgctgagggc 400

tacctggctc accctgtgaa tgcctacaaa ctggtgaagc ggctaaacac 450

agactggcct gcgctggagg accttgtcct gcaggactca gctgcagggt 500

ttatcgccaa cctctctgtg cagcggcagt tcttccccac tgatgaggac 550

gagataggag ctgccaaagc cctgatgaga cttcaggaca catacaggct 600

ggaccaggc acaatttcca gaggggaact tccaggaacc aagtaccagg 650

caatgctgag tgtggatgac tgctttggga tgggccgctc ggccataaat 700

gaaggggact attatcatatc ggtgttgtgg atggagcagg tgctaaagca 750  
 gcttgatgcc ggggaggagg ccaccacaac caagtcacag gtgctggact 800  
 acctcagcta tgctgtcttc cagttgggtg atctgcaccg tgccctggag 850  
 ctcacccgcc gcctgtcttc ccttgacca agccacgaac gagctggagg 900  
 gaatctgcgg tactttgagc agttattgga ggaagagaga gaaaaaacgt 950  
 taacaaatca gacagaagct gagctagcaa cccagaagg catctatgag 1000  
 aggcctgtgg actacctgcc tgagagggat gtttacgaga gcctctgtcg 1050  
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 ggtaccacca tggcaacagg gcccacagc tgctcattgc ccccttcaa 1150  
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<400> 332

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| Met | Lys | Leu | Trp | Val | Ser | Ala | Leu | Leu | Met | Ala | Trp | Phe | Gly | Val |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |
| Leu | Ser | Cys | Val | Gln | Ala | Glu | Phe | Phe | Thr | Ser | Ile | Gly | His | Met |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |
| Thr | Asp | Leu | Ile | Tyr | Ala | Glu | Lys | Glu | Leu | Val | Gln | Ser | Leu | Lys |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |
| Glu | Tyr | Ile | Leu | Val | Glu | Glu | Ala | Lys | Leu | Ser | Lys | Ile | Lys | Ser |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |
| Trp | Ala | Asn | Lys | Met | Glu | Ala | Leu | Thr | Ser | Lys | Ser | Ala | Ala | Asp |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |
| Ala | Glu | Gly | Tyr | Leu | Ala | His | Pro | Val | Asn | Ala | Tyr | Lys | Leu | Val |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |
| Lys | Arg | Leu | Asn | Thr | Asp | Trp | Pro | Ala | Leu | Glu | Asp | Leu | Val | Leu |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |
| Gln | Asp | Ser | Ala | Ala | Gly | Phe | Ile | Ala | Asn | Leu | Ser | Val | Gln | Arg |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |
| Gln | Phe | Phe | Pro | Thr | Asp | Glu | Asp | Glu | Ile | Gly | Ala | Ala | Lys | Ala |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |
| Leu | Met | Arg | Leu | Gln | Asp | Thr | Tyr | Arg | Leu | Asp | Pro | Gly | Thr | Ile |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |
| Ser | Arg | Gly | Glu | Leu | Pro | Gly | Thr | Lys | Tyr | Gln | Ala | Met | Leu | Ser |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |
| Val | Asp | Asp | Cys | Phe | Gly | Met | Gly | Arg | Ser | Ala | Tyr | Asn | Glu | Gly |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |
| Asp | Tyr | Tyr | His | Thr | Val | Leu | Trp | Met | Glu | Gln | Val | Leu | Lys | Gln |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |
| Leu | Asp | Ala | Gly | Glu | Glu | Ala | Thr | Thr | Thr | Lys | Ser | Gln | Val | Leu |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |
| Asp | Tyr | Leu | Ser | Tyr | Ala | Val | Phe | Gln | Leu | Gly | Asp | Leu | His | Arg |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |
| Ala | Leu | Glu | Leu | Thr | Arg | Arg | Leu | Leu | Ser | Leu | Asp | Pro | Ser | His |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Glu | Arg | Ala | Gly | Gly | Asn | Leu | Arg | Tyr | Phe | Glu | Gln | Leu | Leu | Glu |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |
| Glu | Glu | Arg | Glu | Lys | Thr | Leu | Thr | Asn | Gln | Thr | Glu | Ala | Glu | Leu |



| 260 |     |     |     |     |     |     |     |     |     | 265 |     |     |     |     | 270 |  |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Ala | Thr | Pro | Glu | Gly | Ile | Tyr | Glu | Arg | Pro | Val | Asp | Tyr | Leu | Pro |     |  |  |  |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |  |  |  |  |
| Glu | Arg | Asp | Val | Tyr | Glu | Ser | Leu | Cys | Arg | Gly | Glu | Gly | Val | Lys |     |  |  |  |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |  |  |  |  |
| Leu | Thr | Pro | Arg | Arg | Gln | Lys | Arg | Leu | Phe | Cys | Arg | Tyr | His | His |     |  |  |  |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |  |  |  |  |
| Gly | Asn | Arg | Ala | Pro | Gln | Leu | Leu | Ile | Ala | Pro | Phe | Lys | Glu | Glu |     |  |  |  |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |     |  |  |  |  |
| Asp | Glu | Trp | Asp | Ser | Pro | His | Ile | Val | Arg | Tyr | Tyr | Asp | Val | Met |     |  |  |  |  |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |     |  |  |  |  |
| Ser | Asp | Glu | Glu | Ile | Glu | Arg | Ile | Lys | Glu | Ile | Ala | Lys | Pro | Lys |     |  |  |  |  |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |     |  |  |  |  |
| Leu | Ala | Arg | Ala | Thr | Val | Arg | Asp | Pro | Lys | Thr | Gly | Val | Leu | Thr |     |  |  |  |  |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |     |  |  |  |  |
| Val | Ala | Ser | Tyr | Arg | Val | Ser | Lys | Ser | Ser | Trp | Leu | Glu | Glu | Asp |     |  |  |  |  |
|     |     |     |     | 380 |     |     |     |     | 385 |     |     |     |     | 390 |     |  |  |  |  |
| Asp | Asp | Pro | Val | Val | Ala | Arg | Val | Asn | Arg | Arg | Met | Gln | His | Ile |     |  |  |  |  |
|     |     |     |     | 395 |     |     |     |     | 400 |     |     |     |     | 405 |     |  |  |  |  |
| Thr | Gly | Leu | Thr | Val | Lys | Thr | Ala | Glu | Leu | Leu | Gln | Val | Ala | Asn |     |  |  |  |  |
|     |     |     |     | 410 |     |     |     |     | 415 |     |     |     |     | 420 |     |  |  |  |  |
| Tyr | Gly | Val | Gly | Gly | Gln | Tyr | Glu | Pro | His | Phe | Asp | Phe | Ser | Arg |     |  |  |  |  |
|     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |     | 435 |     |  |  |  |  |
| Arg | Pro | Phe | Asp | Ser | Gly | Leu | Lys | Thr | Glu | Gly | Asn | Arg | Leu | Ala |     |  |  |  |  |
|     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     | 450 |     |  |  |  |  |
| Thr | Phe | Leu | Asn | Tyr | Met | Ser | Asp | Val | Glu | Ala | Gly | Gly | Ala | Thr |     |  |  |  |  |
|     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     | 465 |     |  |  |  |  |
| Val | Phe | Pro | Asp | Leu | Gly | Ala | Ala | Ile | Trp | Pro | Lys | Lys | Gly | Thr |     |  |  |  |  |
|     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |     |  |  |  |  |
| Ala | Val | Phe | Trp | Tyr | Asn | Leu | Leu | Arg | Ser | Gly | Glu | Gly | Asp | Tyr |     |  |  |  |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |  |  |  |  |
| Arg | Thr | Arg | His | Ala | Ala | Cys | Pro | Val | Leu | Val | Gly | Cys | Lys | Trp |     |  |  |  |  |
|     |     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |  |  |  |  |
| Val | Ser | Asn | Lys | Trp | Phe | His | Glu | Arg | Gly | Gln | Glu | Phe | Leu | Arg |     |  |  |  |  |
|     |     |     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |  |  |  |  |
| Pro | Cys | Gly | Ser | Thr | Glu | Val | Asp |     |     |     |     |     |     |     |     |  |  |  |  |
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<400> 339

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| Met | Arg | Leu | Ser | Ser | Leu | Leu | Ala | Leu | Leu | Arg | Pro | Ala | Leu | Pro |
| 1   |     |     |     |     | 5   |     |     |     | 10  |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Ile | Leu | Gly | Leu | Ser | Leu | Gly | Cys | Ser | Leu | Ser | Leu | Leu | Arg |  |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |  |
| Val | Ser | Trp | Ile | Gln | Gly | Glu | Gly | Glu | Asp | Pro | Cys | Val | Glu | Ala |  |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |  |
| Val | Gly | Glu | Arg | Gly | Gly | Pro | Gln | Asn | Pro | Asp | Ser | Arg | Ala | Arg |  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |  |
| Leu | Asp | Gln | Ser | Asp | Glu | Asp | Phe | Lys | Pro | Arg | Ile | Val | Pro | Tyr |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |  |
| Tyr | Arg | Asp | Pro | Asn | Lys | Pro | Tyr | Lys | Lys | Val | Leu | Arg | Thr | Arg |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Tyr | Ile | Gln | Thr | Glu | Leu | Gly | Ser | Arg | Glu | Arg | Leu | Leu | Val | Ala |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Val | Leu | Thr | Ser | Arg | Ala | Thr | Leu | Ser | Thr | Leu | Ala | Val | Ala | Val |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Asn | Arg | Thr | Val | Ala | His | His | Phe | Pro | Arg | Leu | Leu | Tyr | Phe | Thr |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Gly | Gln | Arg | Gly | Ala | Arg | Ala | Pro | Ala | Gly | Met | Gln | Val | Val | Ser |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| His | Gly | Asp | Glu | Arg | Pro | Ala | Trp | Leu | Met | Ser | Glu | Thr | Leu | Arg |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| His | Leu | His | Thr | His | Phe | Gly | Ala | Asp | Tyr | Asp | Trp | Phe | Phe | Ile |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Met | Gln | Asp | Asp | Thr | Tyr | Val | Gln | Ala | Pro | Arg | Leu | Ala | Ala | Leu |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Ala | Gly | His | Leu | Ser | Ile | Asn | Gln | Asp | Leu | Tyr | Leu | Gly | Arg | Ala |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Glu | Glu | Phe | Ile | Gly | Ala | Gly | Glu | Gln | Ala | Arg | Tyr | Cys | His | Gly |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Gly | Phe | Gly | Tyr | Leu | Leu | Ser | Arg | Ser | Leu | Leu | Leu | Arg | Leu | Arg |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Pro | His | Leu | Asp | Gly | Cys | Arg | Gly | Asp | Ile | Leu | Ser | Ala | Arg | Pro |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Asp | Glu | Trp | Leu | Gly | Arg | Cys | Leu | Ile | Asp | Ser | Leu | Gly | Val | Gly |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Cys | Val | Ser | Gln | His | Gln | Gly | Gln | Gln | Tyr | Arg | Ser | Phe | Glu | Leu |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Ala | Lys | Asn | Arg | Asp | Pro | Glu | Lys | Glu | Gly | Ser | Ser | Ala | Phe | Leu |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| Ser | Ala | Phe | Ala | Val | His | Pro | Val | Ser | Glu | Gly | Thr | Leu | Met | Tyr |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Arg | Leu | His | Lys | Arg | Phe | Ser | Ala | Leu | Glu | Leu | Glu | Arg | Ala | Tyr |  |
|     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |  |
| Ser | Glu | Ile | Glu | Gln | Leu | Gln | Ala | Gln | Ile | Arg | Asn | Leu | Thr | Val |  |
|     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |  |
| Leu | Thr | Pro | Glu | Gly | Glu | Ala | Gly | Leu | Ser | Trp | Pro | Val | Gly | Leu |  |
|     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |  |
| Pro | Ala | Pro | Phe | Thr | Pro | His | Ser | Arg | Phe | Glu | Val | Leu | Gly | Trp |  |
|     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |  |
| Asp | Tyr | Phe | Thr | Glu | Gln | His | Thr | Phe | Ser | Cys | Ala | Asp | Gly | Ala |  |
|     |     |     |     | 380 |     |     |     |     | 385 |     |     |     |     | 390 |  |
| Pro | Lys | Cys | Pro | Leu | Gln | Gly | Ala | Ser | Arg | Ala | Asp | Val | Gly | Asp |  |
|     |     |     |     | 395 |     |     |     |     | 400 |     |     |     |     | 405 |  |
| Ala | Leu | Glu | Thr | Ala | Leu | Glu | Gln | Leu | Asn | Arg | Arg | Tyr | Gln | Pro |  |
|     |     |     |     | 410 |     |     |     |     | 415 |     |     |     |     | 420 |  |
| Arg | Leu | Arg | Phe | Gln | Lys | Gln | Arg | Leu | Leu | Asn | Gly | Tyr | Arg | Arg |  |
|     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |     | 435 |  |
| Phe | Asp | Pro | Ala | Arg | Gly | Met | Glu | Tyr | Thr | Leu | Asp | Leu | Leu | Leu |  |
|     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     | 450 |  |
| Glu | Cys | Val | Thr | Gln | Arg | Gly | His | Arg | Arg | Ala | Leu | Ala | Arg | Arg |  |
|     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     | 465 |  |
| Val | Ser | Leu | Leu | Arg | Pro | Leu | Ser | Arg | Val | Glu | Ile | Leu | Pro | Met |  |
|     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Pro | Tyr | Val | Thr | Glu | Ala | Thr | Arg | Val | Gln | Leu | Val | Leu | Pro | Leu |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |  |
| Leu | Val | Ala | Glu | Ala | Ala | Ala | Ala | Pro | Ala | Phe | Leu | Glu | Ala | Phe |  |
|     |     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |  |
| Ala | Ala | Asn | Val | Leu | Glu | Pro | Arg | Glu | His | Ala | Leu | Leu | Thr | Leu |  |
|     |     |     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |  |
| Leu | Leu | Val | Tyr | Gly | Pro | Arg | Glu | Gly | Gly | Arg | Gly | Ala | Pro | Asp |  |
|     |     |     |     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |  |
| Pro | Phe | Leu | Gly | Val | Lys | Ala | Ala | Ala | Ala | Glu | Leu | Glu | Arg | Arg |  |
|     |     |     |     | 545 |     |     |     |     | 550 |     |     |     |     | 555 |  |
| Tyr | Pro | Gly | Thr | Arg | Leu | Ala | Trp | Leu | Ala | Val | Arg | Ala | Glu | Ala |  |
|     |     |     |     | 560 |     |     |     |     | 565 |     |     |     |     | 570 |  |
| Pro | Ser | Gln | Val | Arg | Leu | Met | Asp | Val | Val | Ser | Lys | Lys | His | Pro |  |
|     |     |     |     | 575 |     |     |     |     | 580 |     |     |     |     | 585 |  |
| Val | Asp | Thr | Leu | Phe | Phe | Leu | Thr | Thr | Val | Trp | Thr | Arg | Pro | Gly |  |
|     |     |     |     | 590 |     |     |     |     | 595 |     |     |     |     | 600 |  |
| Pro | Glu | Val | Leu | Asn | Arg | Cys | Arg | Met | Asn | Ala | Ile | Ser | Gly | Trp |  |

| 605 |     |     |     |     |     |     |     |     |     | 610 |     |     |     |     | 615 |  |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Gln | Ala | Phe | Phe | Pro | Val | His | Phe | Gln | Glu | Phe | Asn | Pro | Ala | Leu |     |  |  |  |  |
|     |     |     |     | 620 |     |     |     |     | 625 |     |     |     |     | 630 |     |  |  |  |  |
| Ser | Pro | Gln | Arg | Ser | Pro | Pro | Gly | Pro | Pro | Gly | Ala | Gly | Pro | Asp |     |  |  |  |  |
|     |     |     |     | 635 |     |     |     |     | 640 |     |     |     |     | 645 |     |  |  |  |  |
| Pro | Pro | Ser | Pro | Pro | Gly | Ala | Asp | Pro | Ser | Arg | Gly | Ala | Pro | Ile |     |  |  |  |  |
|     |     |     |     | 650 |     |     |     |     | 655 |     |     |     |     | 660 |     |  |  |  |  |
| Gly | Gly | Arg | Phe | Asp | Arg | Gln | Ala | Ser | Ala | Glu | Gly | Cys | Phe | Tyr |     |  |  |  |  |
|     |     |     |     | 665 |     |     |     |     | 670 |     |     |     |     | 675 |     |  |  |  |  |
| Asn | Ala | Asp | Tyr | Leu | Ala | Ala | Arg | Ala | Arg | Leu | Ala | Gly | Glu | Leu |     |  |  |  |  |
|     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |     | 690 |     |  |  |  |  |
| Ala | Gly | Gln | Glu | Glu | Glu | Glu | Ala | Leu | Glu | Gly | Leu | Glu | Val | Met |     |  |  |  |  |
|     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     | 705 |     |  |  |  |  |
| Asp | Val | Phe | Leu | Arg | Phe | Ser | Gly | Leu | His | Leu | Phe | Arg | Ala | Val |     |  |  |  |  |
|     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |     |  |  |  |  |
| Glu | Pro | Gly | Leu | Val | Gln | Lys | Phe | Ser | Leu | Arg | Asp | Cys | Ser | Pro |     |  |  |  |  |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |  |  |  |  |
| Arg | Leu | Ser | Glu | Glu | Leu | Tyr | His | Arg | Cys | Arg | Leu | Ser | Asn | Leu |     |  |  |  |  |
|     |     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |  |  |  |  |
| Glu | Gly | Leu | Gly | Gly | Arg | Ala | Gln | Leu | Ala | Met | Ala | Leu | Phe | Glu |     |  |  |  |  |
|     |     |     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |  |  |  |  |
| Gln | Glu | Gln | Ala | Asn | Ser | Thr |     |     |     |     |     |     |     |     |     |  |  |  |  |
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 tgctaggaca cattaggatt ggtcatggaa atagaatgca ccaccatgag 200  
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 ttgtaaaacc caaagatgtg agtctttggg ctgcagtaaa ggagacttgg 350  
 accaaacact gtgacaaagc agagttcttc agttctgaaa atgttaaagt 400  
 gtttgagtca attaatatgg acacaaatga catgtgggta atgatgagaa 450

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gcaaatgata tctctagttg tgaatttgtg attaaagtaa aacttttagc 1450  
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<211> 318

<212> PRT

<213> Homo Sapien

<400> 341

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| Met | Leu | Ser | Glu | Ser | Ser | Ser | Phe | Leu | Lys | Gly | Val | Met | Leu | Gly |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     | 15  |     |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Ser | Ile | Phe | Cys | Ala | Leu | Ile | Thr | Met | Leu | Gly | His | Ile | Arg | Ile |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     | 30  |     |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Gly | His | Gly | Asn | Arg | Met | His | His | His | Glu | His | His | His | Leu | Gln |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     | 45  |     |



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ala | Pro | Asn | Lys | Glu | Asp | Ile | Leu | Lys | Ile | Ser | Glu | Asp | Glu | Arg |  |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |  |
| Met | Glu | Leu | Ser | Lys | Ser | Phe | Arg | Val | Tyr | Cys | Ile | Ile | Leu | Val |  |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |  |
| Lys | Pro | Lys | Asp | Val | Ser | Leu | Trp | Ala | Ala | Val | Lys | Glu | Thr | Trp |  |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |  |
| Thr | Lys | His | Cys | Asp | Lys | Ala | Glu | Phe | Phe | Ser | Ser | Glu | Asn | Val |  |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |  |
| Lys | Val | Phe | Glu | Ser | Ile | Asn | Met | Asp | Thr | Asn | Asp | Met | Trp | Leu |  |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Met | Met | Arg | Lys | Ala | Tyr | Lys | Tyr | Ala | Phe | Asp | Lys | Tyr | Arg | Asp |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |  |
| Gln | Tyr | Asn | Trp | Phe | Phe | Leu | Ala | Arg | Pro | Thr | Thr | Phe | Ala | Ile |  |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |  |
| Ile | Glu | Asn | Leu | Lys | Tyr | Phe | Leu | Leu | Lys | Lys | Asp | Pro | Ser | Gln |  |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |  |
| Pro | Phe | Tyr | Leu | Gly | His | Thr | Ile | Lys | Ser | Gly | Asp | Leu | Glu | Tyr |  |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Val | Gly | Met | Glu | Gly | Gly | Ile | Val | Leu | Ser | Val | Glu | Ser | Met | Lys |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |  |
| Arg | Leu | Asn | Ser | Leu | Leu | Asn | Ile | Pro | Glu | Lys | Cys | Pro | Glu | Gln |  |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |  |
| Gly | Gly | Met | Ile | Trp | Lys | Ile | Ser | Glu | Asp | Lys | Gln | Leu | Ala | Val |  |
|     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     | 225 |  |
| Cys | Leu | Lys | Tyr | Ala | Gly | Val | Phe | Ala | Glu | Asn | Ala | Glu | Asp | Ala |  |
|     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Asp | Gly | Lys | Asp | Val | Phe | Asn | Thr | Lys | Ser | Val | Gly | Leu | Ser | Ile |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |  |
| Lys | Glu | Ala | Met | Thr | Tyr | His | Pro | Asn | Gln | Val | Val | Glu | Gly | Cys |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |  |
| Cys | Ser | Asp | Met | Ala | Val | Thr | Phe | Asn | Gly | Leu | Thr | Pro | Asn | Gln |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |  |
| Met | His | Val | Met | Met | Tyr | Gly | Val | Tyr | Arg | Leu | Arg | Ala | Phe | Gly |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |  |
| His | Ile | Phe | Asn | Asp | Ala | Leu | Val | Phe | Leu | Pro | Pro | Asn | Gly | Ser |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |  |
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 aaaaaatgaa ttcatctaaa tcatctgaaa cacaatgcac agagagagga 150  
 tgctttctctt cccaaatgtt cttatggact gttgctggga tccccatcct 200  
 atttctcagt gcctgtttca tcaccagatg tggtgtgaca tttcgcacat 250  
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 gaactgggaa tattttcaat ccagctgcta cttcttttct actgacacca 400  
 tttcctgggc gttaagttta aagaactgct cagccatggg ggctcacctg 450  
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 tgaacttcaa aggacttcat aagtatttgt tactctgata caaataaaaa 900



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<211> 219

<212> PRT

<213> Homo Sapien

<400> 377

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asn | Ser | Ser | Lys | Ser | Ser | Glu | Thr | Gln | Cys | Thr | Glu | Arg | Gly |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Phe | Ser | Ser | Gln | Met | Phe | Leu | Trp | Thr | Val | Ala | Gly | Ile | Pro |
|     |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Leu | Phe | Leu | Ser | Ala | Cys | Phe | Ile | Thr | Arg | Cys | Val | Val | Thr |
|     |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Arg | Ile | Phe | Gln | Thr | Cys | Asp | Glu | Lys | Lys | Phe | Gln | Leu | Pro |
|     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Asn | Phe | Thr | Glu | Leu | Ser | Cys | Tyr | Asn | Tyr | Gly | Ser | Gly | Ser |
|     |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     | 75  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Lys | Asn | Cys | Cys | Pro | Leu | Asn | Trp | Glu | Tyr | Phe | Gln | Ser | Ser |
|     |     |     |     | 80  |     |     |     |     | 85  |     |     |     |     | 90  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Tyr | Phe | Phe | Ser | Thr | Asp | Thr | Ile | Ser | Trp | Ala | Leu | Ser | Leu |
|     |     |     |     | 95  |     |     |     |     | 100 |     |     |     |     | 105 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Asn | Cys | Ser | Ala | Met | Gly | Ala | His | Leu | Val | Val | Ile | Asn | Ser |
|     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Glu | Glu | Gln | Glu | Phe | Leu | Ser | Tyr | Lys | Lys | Pro | Lys | Met | Arg |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     | 135 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Phe | Phe | Ile | Gly | Leu | Ser | Asp | Gln | Val | Val | Glu | Gly | Gln | Trp |
|     |     |     |     | 140 |     |     |     |     | 145 |     |     |     |     | 150 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Trp | Val | Asp | Gly | Thr | Pro | Leu | Thr | Lys | Ser | Leu | Ser | Phe | Trp |
|     |     |     |     | 155 |     |     |     |     | 160 |     |     |     |     | 165 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Val | Gly | Glu | Pro | Asn | Asn | Ile | Ala | Thr | Leu | Glu | Asp | Cys | Ala |
|     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Met | Arg | Asp | Ser | Ser | Asn | Pro | Arg | Gln | Asn | Trp | Asn | Asp | Val |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     | 195 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Cys | Phe | Leu | Asn | Tyr | Phe | Arg | Ile | Cys | Glu | Met | Val | Gly | Ile |
|     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     | 210 |

|     |     |     |     |     |     |     |     |     |  |  |  |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|--|--|
| Asn | Pro | Leu | Asn | Lys | Gly | Lys | Ser | Leu |  |  |  |  |  |  |
|     |     |     |     | 215 |     |     |     |     |  |  |  |  |  |  |

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<210> 389  
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<210> 397

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<400> 410  
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<210> 411  
<211> 23  
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<220>  
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<210> 412  
<211> 24  
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<210> 413  
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<210> 422

<211> 3554

<212> DNA

<213> Homo Sapien

<400> 422

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tcaaattccag caatcgaacc ccagtggtag aggaatttga aagtgtggaa 200

ctgtcttgca tcattacgga ttcgcagaca agtgacccca ggatcgagt 250

gaagaaaatt caagatgaac aaaccacata tgtgtttttt gacaacaaaa 300

ttcagggaga cttggcggtt cgtgcagaaa tactggggaa gacatccctg 350

aagatctgga atgtgacacg gagagactca gccctttatc gctgtgaggt 400

cgttgctcga aatgaccgca aggaaattga tgagattgtg atcgagttaa 450

ctgtgcaagt gaagccagt acccctgtct gtagagtgcc gaaggctgta 500

ccagtaggca agatggcaac actgcactgc caggagagtg agggccaccc 550

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ccagagccaa tcccagattt cgcaattctt ctttccactt aaactctgaa 650

acaggcactt tgggtgttcac tgctgttcac aaggacgact ctgggcagta 700

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agatggaagt ctatgacctg aacattggcg gaattattgg gggggttctg 800

gttgtccttg ctgtactggc cctgatcacg ttgggcatct gctgtgcata 850

cagacgtggc tacttcatca acaataaaca ggatggagaa agttacaaga 900

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 Ala Val Asn Leu Lys Ser Ser Asn Arg Thr Pro Val Val Gln Glu  
 35 40 45  
 Phe Glu Ser Val Glu Leu Ser Cys Ile Ile Thr Asp Ser Gln Thr  
 50 55 60  
 Ser Asp Pro Arg Ile Glu Trp Lys Lys Ile Gln Asp Glu Gln Thr  
 65 70 75  
 Thr Tyr Val Phe Phe Asp Asn Lys Ile Gln Gly Asp Leu Ala Gly  
 80 85 90  
 Arg Ala Glu Ile Leu Gly Lys Thr Ser Leu Lys Ile Trp Asn Val

|   | 95  | 100 | 105 |
|---|-----|-----|-----|
| Thr Arg Arg Asp Ser Ala Leu Tyr Arg Cys Glu Val Val Ala Arg | 110 | 115 | 120 |
| Asn Asp Arg Lys Glu Ile Asp Glu Ile Val Ile Glu Leu Thr Val | 125 | 130 | 135 |
| Gln Val Lys Pro Val Thr Pro Val Cys Arg Val Pro Lys Ala Val | 140 | 145 | 150 |
| Pro Val Gly Lys Met Ala Thr Leu His Cys Gln Glu Ser Glu Gly | 155 | 160 | 165 |
| His Pro Arg Pro His Tyr Ser Trp Tyr Arg Asn Asp Val Pro Leu | 170 | 175 | 180 |
| Pro Thr Asp Ser Arg Ala Asn Pro Arg Phe Arg Asn Ser Ser Phe | 185 | 190 | 195 |
| His Leu Asn Ser Glu Thr Gly Thr Leu Val Phe Thr Ala Val His | 200 | 205 | 210 |
| Lys Asp Asp Ser Gly Gln Tyr Tyr Cys Ile Ala Ser Asn Asp Ala | 215 | 220 | 225 |
| Gly Ser Ala Arg Cys Glu Glu Gln Glu Met Glu Val Tyr Asp Leu | 230 | 235 | 240 |
| Asn Ile Gly Gly Ile Ile Gly Gly Val Leu Val Val Leu Ala Val | 245 | 250 | 255 |
| Leu Ala Leu Ile Thr Leu Gly Ile Cys Cys Ala Tyr Arg Arg Gly | 260 | 265 | 270 |
| Tyr Phe Ile Asn Asn Lys Gln Asp Gly Glu Ser Tyr Lys Asn Pro | 275 | 280 | 285 |
| Gly Lys Pro Asp Gly Val Asn Tyr Ile Arg Thr Asp Glu Glu Gly | 290 | 295 | 300 |
| Asp Phe Arg His Lys Ser Ser Phe Val Ile                     | 305 | 310 |     |